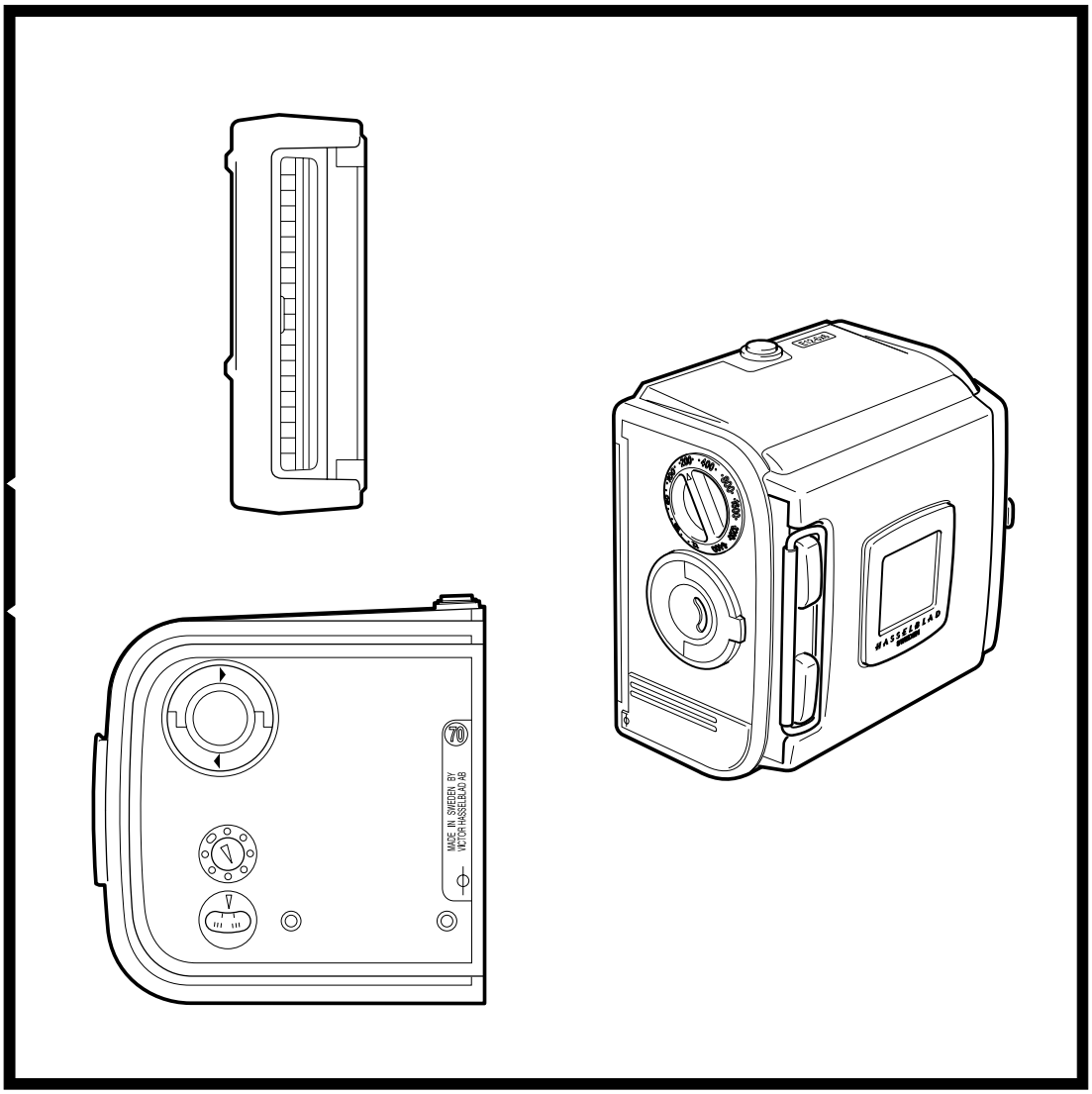
HASSELBLAD

Service Manual
Film magazines



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Victor Hasselblad AB

Göteborg Sweden

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Film magazines

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Film magazines

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Magazines

06/93	Modification - A12, A16, A24 and 70 (incl. TCC)
11/94	E-type film magazines introduced - E12, E16 and E24
15/95	Stop arm modification - A, E and TCC
20/95	Film magazine E12, E16 and E24
25/95	Magazine shell and support modification - A, E and TCC
26/95	New spool holder - A16
27/95	Magazines redesigned - A12, A16 and A24
08/96	New dark slide holder - E12, E16, E24 and E12CC
09/96	Fixed stop screw - A24 and E24
10/96	Modified spool holder - E12, E16, E24, E12CC and A16
10/97	New picture frame - A16 and E16
11/97	New spacing gear - A16 and E16
12/97	Modified magazine support - A12, A24, E12, E24 and E12CC
19/97	Shaft and mechanism plate modification - A12, A16 and A24
24/97	Film magazine - A32
25/97	Spare part number changed - PolaPlus/PolaBasic
01/00	New CD-ROM - Version 1.2
02/00	Adjustment of the eccentric - A16 and E16
09/00	New CD-ROM - Version 1.3
15/00	Discontinued modification kit - friction brake A12
16/00	Modification of light trap foil
04/01	New CD-ROM - Version 2.0

Film magazines series A, E and TCC

Right cover (see page 13)

Pull out the magazine slide.
Remove the spool holder from the magazine.
Dismantle the magazine slide holder where appropriate. Remove the leather from the cover.
Unscrew 3 screws 823012 and lift off the right cover.

Mechanism (see page 12)

Remove the washer 810927, loosen 2 screws 823012 and lift off plate 308485. Remove gear 12209. Pull up the shaft 308426, and remove the complete gear 308109. Lift off and separate the spring housing 13030 from hub 14185, remove return spring 14184. Remove the clip 817132, washer 810802 and return stop 20717.

Remove the washer 810926, unhook spring 814852 from link 21494. Unhook the 2 springs 814527 from the riveted pin (A Fig. 1).
Remove the signal 13031, loosen 3 screws 824202 and lift off dial 13806, remove spring 816611.

Pull up the shaft 12819 and remove arm 22715. Lift the centre mechanism 21548 up from the hub in the magazine support (B Fig. 1), turn it slightly sideways, and lift off gear 22371 and thereafter centre mechanism 21548. Remove the release arm 22277.

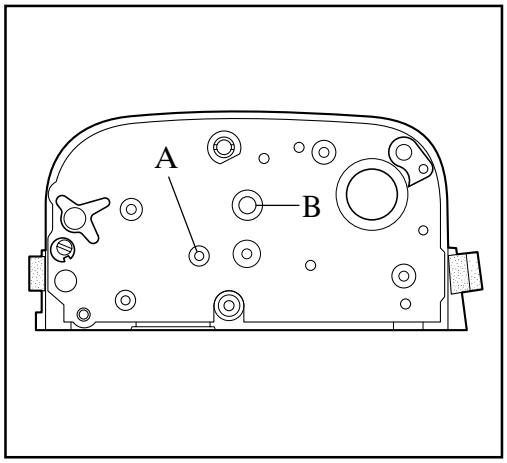


Fig. 1

Outer plate (see page 12 and 13).

Unscrew 9 screws 823015 and lift off the outer plate. Remove the light trap 13067, foil 13508, exposure lock 21535, spring 13820, 2 plate springs 13821 and locking spring 20684.
Remove the locking arm 20843 from button 22356.
Unhook the spring 814752 from the locking arm.

Film magazines series A, E and TCC

Shell (see page 13)

Loosen the screws 823017 and 823013 situated underneath the leather on the shell.
(The shell of older magazines are slightly different, where 2 screws 820013 are going through the right side of the body and into the frame. They have to be dismantled too. See Service Info 25/95).
Separate the shell from the magazine support.

Spool holder (see page 16 and 17)

Loosen 4 screws 824033, lift up the plate 312105 slightly and remove pressure plate 308104 and plate spring 13913. Loosen the 2 screws 826028, disconnect spring 814952 from support 308516, and lift off plate 312105 and arm 22398.
Lift off the rollers 13514, remove spring 12540 and looking shaft 308103.

Remove the leather 308521 and rubber plate 308365. Unscrew the 4 screws 823435. Lift off the cover 308519. Remove the indicators and dials.

CAUTION! When handling the circuit board a grounded bench mat and a wrist strap must be used to prevent ESD damage.

Unsolder the 4 cables of the contact assembly 308043 from the circuit board. Remove the circuit board carefully (kept in place by a double sided adhesive tape).

Disassemble the clip 817140 and remove locking mechanism 308101. Loosen the gear 22375 and remove locking mechanism and film signal 22382. Unscrew the 4 screws 823650 and separate the end plate from the support.

Film magazines series A, E and TCC

Shell (see page 13)

Fit the shell on the magazine support. Note! The position of the shell in connection with the support (Fig. 2). Secure with the 5 screws 820013 and 823017. Fold back the leather onto the shell and fasten with glue.

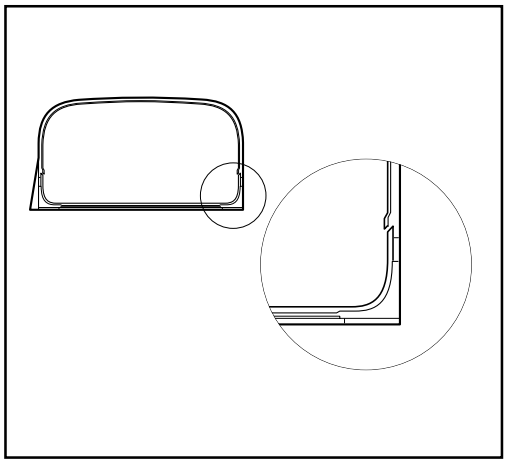


Fig. 2

Outer plate (see page 12 and 13)

Fit the exposure lock 21535, spring 13820 and 2 plate springs 13821 on the support.
Thread the washer 810761 over button 22356 and assemble it in the shell.
Connect the spring 814752 to locking arm 20843. Grease the spring, as well as the upper side of the locking arm, and connect it to button 22356.
Fit the locking spring 20684. Put the light trap 13067 in foil 13508 and fit it on the support. Pull down and hold the light trap in place by means of the magazine slide 41068, fit the outer plate and secure it with 9 screws 823015. Make sure that the exposure lock 21535 and locking arm 20843 are functioning when taking the magazine slide in and out.

Picture frame

The position of the picture frame of the magazine, i. e. the distance between the edge of the picture frame and the outer plate is inspected and adjusted using the magazine gauge V- 4548. The distance is 3.55 mm ± 0.05 mm (Fig. 3).

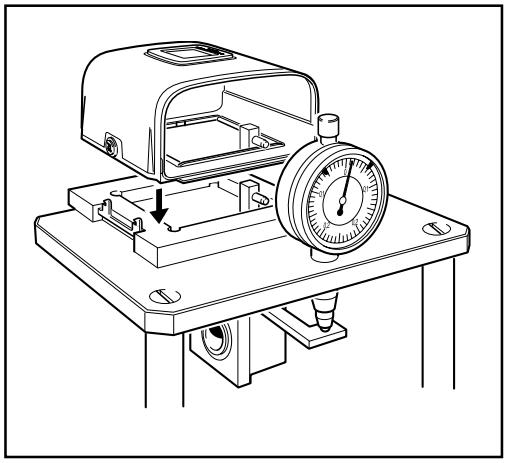
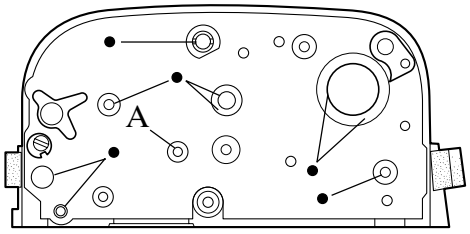


Fig. 3

Film magazines series A, E and TCC

Mechanism (see page 12)

Lubricate with grease (Fig. 4). Fit the release arm 22277. Lubricate the gears and shafts of the centre mechanism 21548 with some drops of oil and fit it over the pin (A Fig 4).
Fit the gear 22371 and bring the centre mechanism into the hub of the magazine support. Fit the spring 816611 into the spacing gear. Tension the spring by rotating the gear clockwise approx. 1 1/2 turns. Turn the spacing gear towards the stop and check that it returns properly (to Zero).



• = Isoflex Topas L 32

Fig. 4

Fit the arm 22715. Lubricate the shaft 12819 with grease and assemble it. Connect 2 springs 814527 to the pin (A Fig. 4).
On the centre mechanism there are 2 springs, connect them to the screw 824060 and link 21494 respectively. Fit the dial 13806 over the spacing gear. Secure with 3 screws 824202, do not tighten the screws too hard (Fig. 5)
Fit the return stop 20717 together with washer 810802 and secure it with clip 817132.

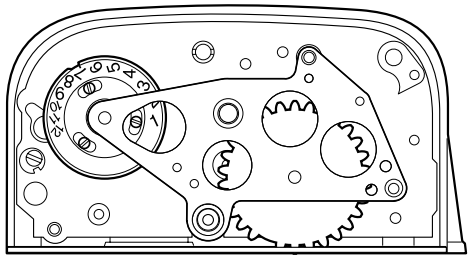
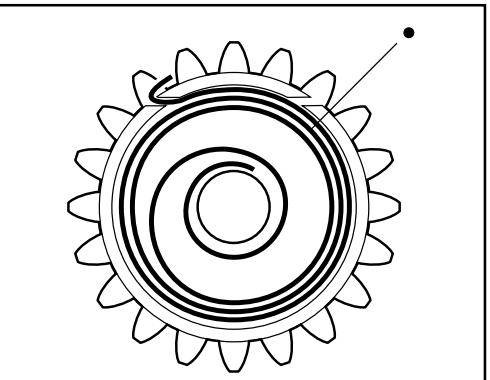


Fig. 5

Fit the spring 14184 in the spring housing as shown in the diagram. The easiest way to do this is to use a new spring kept in its plastic ring, then lubricate the spring with grease (Fig. 6).
Fit the hub 14185 into the spring and assemble back the spring housing on the magazine support.



• = Isoflex Topas L 32

Fig. 6

Film magazines series A, E and TCC

Lubricate the gear assembly 308109 (Fig. 7).
Tension the spring 14184 by rotating the spring housing 13030 clockwise approx. 1 1/2 turns, hold in place and fit the gear assembly (Fig. 8).

Conduct the shaft 308426 through gear 308109. Note! The long pin has to go down into the magazine support. Fit the gear 12209, insert washer 810926 over the centre mechanism 21548, fit the plate 308485 and secure with 2 screws 823012.
Fit the washer 810927 over the plate. Tension the spring 816509 approx. 1 turn and fit the film signal 13031.

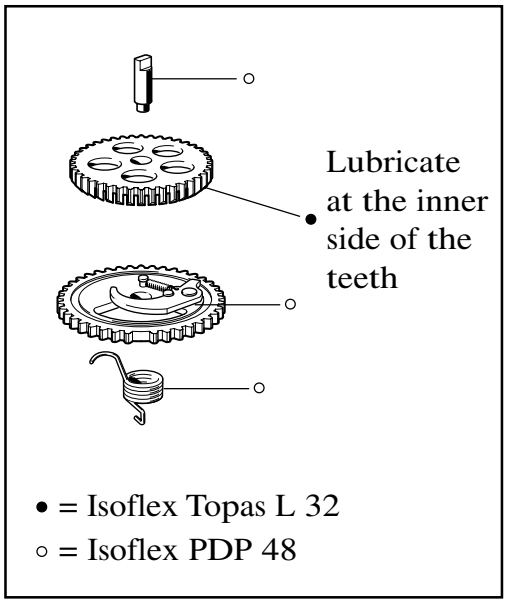


Fig. 7

Adjustment of automatic stop

Press the pin 13754 in with a finger and rotate gear 12209 clockwise on until release arm 22277 falls into the first recess under gear 22371.
At the same time this takes place the stop on plate 308485 has to fall into the recess on dial 13806. This relation will be adjusted by turning the dial. When the correct position is reached the screws 824202 shall be tightened and secured with safety lacquer (Fig. 9)

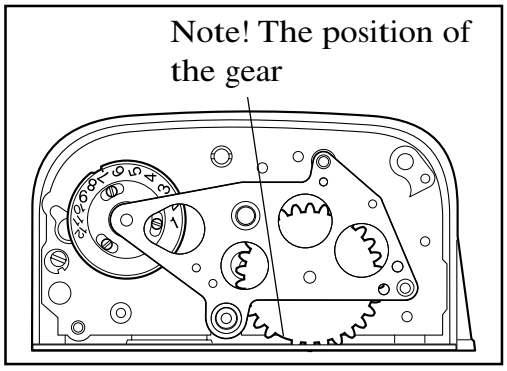


Fig. 8

Adjustment of eccentric 22171

With eccentric 22171 you can easily increase or reduce the distance between the mark (double arrow) at the backing paper and the position of first exposure. Loosen the screw 820013 and rotate the eccentric to the required position and then tighten the screw. Note! The screw shall be secured with loctite. In fig. 9 you can see the basic position of the eccentric, which is set to fit our reference film (Kodak Plus-X).

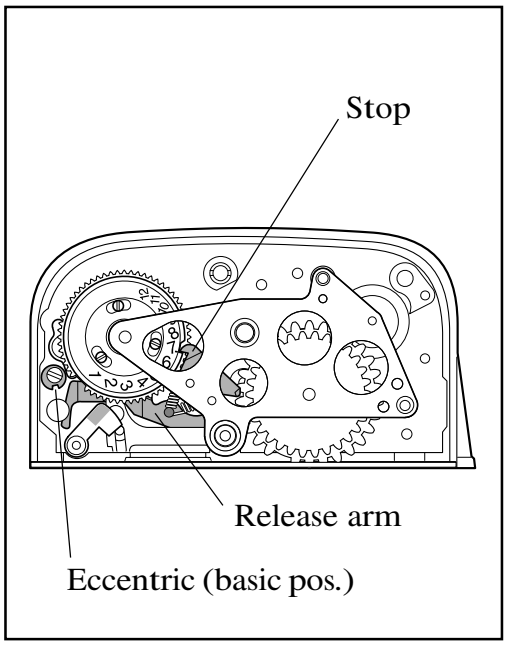


Fig. 9

Film magazines series A, E and TCC

Right cover (see page 13)

Fit the cover, secure with 3 screws 823012 and put the leather back.
Fit the magazine slide holder when necessary.

Spool holder (see page 15 and 16)

CAUTION! When handling the circuit board a grounded bench mat and a wrist strap must be used to prevent ESD damage.

Fit the support and end plate with 4 screws 823650 (secured with loctite). Thread the 4 cables 308043 through the end plate and solder them on the circuit board. Press the circuit board on to the end plate, and if necessary, replace the tape 308495. Fit the dials, indicators, cover, leather and rubber plate. Fit the felt ring 308410, thread the washer 810925 over the lock 308101 and fit it as well as the film signal 22382 into the spool holder, together with gear 22375 so that you will get a red indication in the film indicator (exact adjustment will be set later), fasten the locking handle with clip 817140. Fit the 2 rollers 13514, locking shaft 308103 and spring 12540.

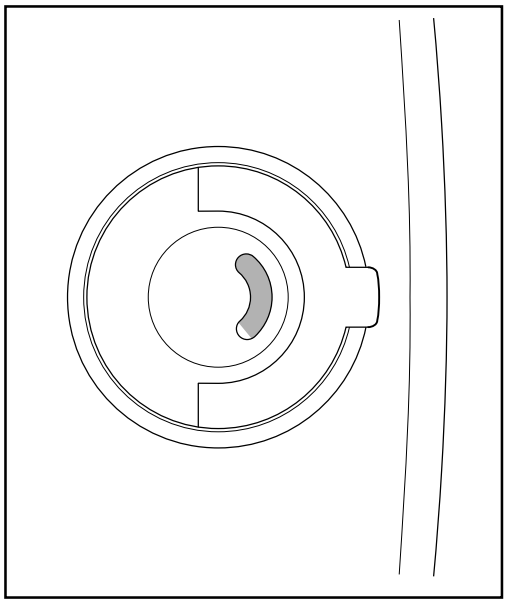


Fig. 10

Adjustment of film indicator

Fit the plate 312105 and take-up arm 22398, connect spring 814952. Place the film indicator gauge V-5065 (magazine 12 and 16) or V-5068 (magazine 24) on the feeding side of the spool holder. Adjust the indicator by holding the gear 22375 in place and thereafter turn the shaft of the film signal 22382 to the position as shown in the diagram (Fig. 10). Take the film indicator gauge off and check that the film signal is changing to fully red (Fig. 11). Secure the gear 22375 to the shaft with safety lacquer. Fit the contact assembly 308043 in plate 312105 with 2 screws 826028. Loosen the screws 824033 somewhat, lift up plate 312105 and fit the plate spring 13913 and the pressure plate 308104, then tighten the screws 824033.

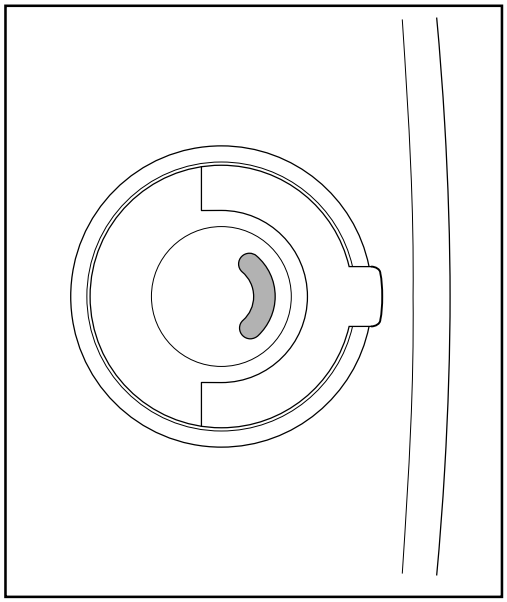


Fig. 11

Film magazines series A, E and TCC

Link to: VHABSTS

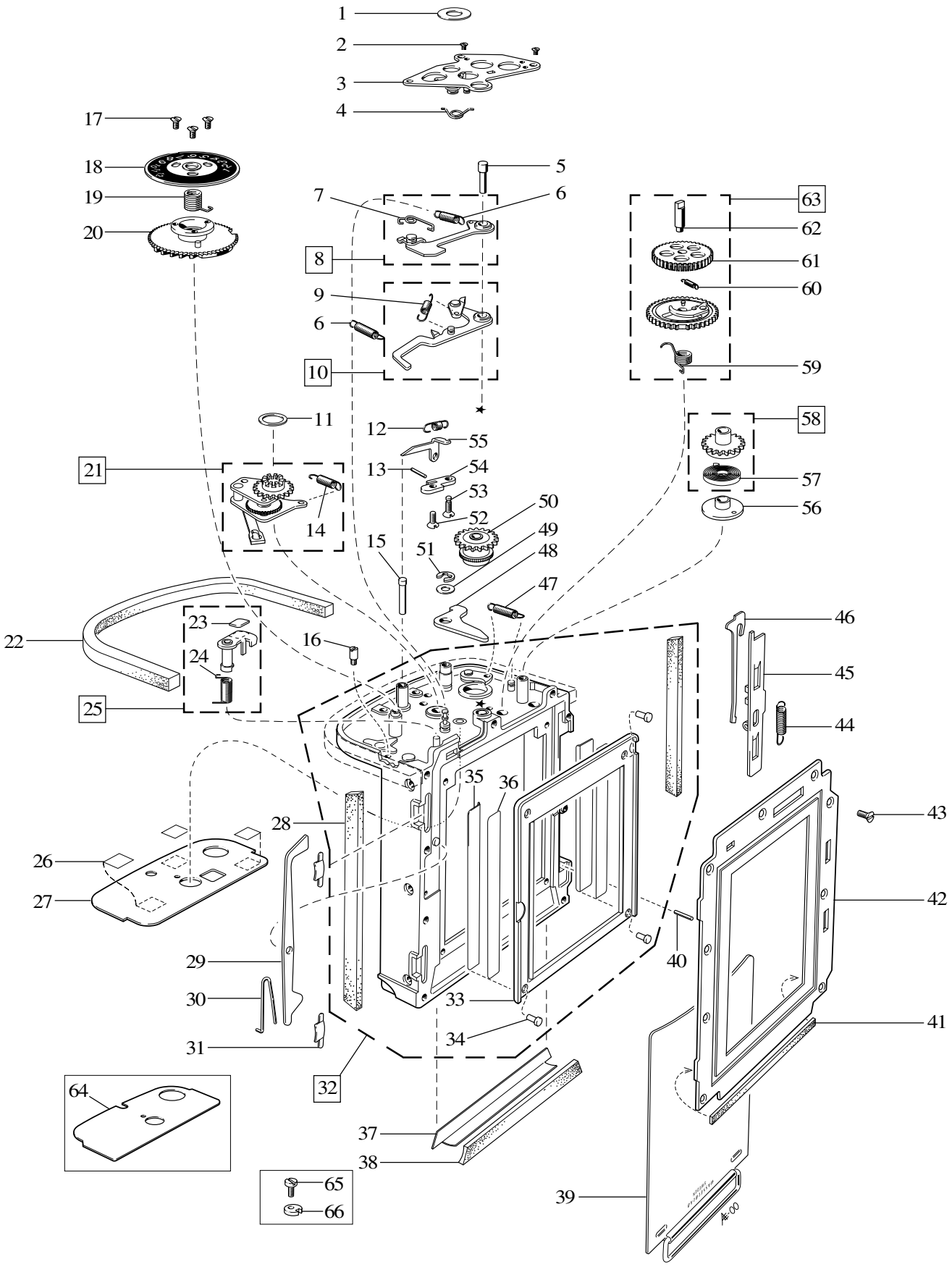
Final checks

Insert the spool holder in to the magazine, advance and check that the automatic stop is functioning (first exposure). Adapt the magazine on a camera body and make some test exposures.
Check that the film counter, exposure signal, etc. are functioning. Take the spool holder out and check that the film counter sets to zero.

Load the magazine with film and check the spacing i.e. that you after every exposure are making a mark on the film inside the picture frame and then check the placing of the "exposures". Check also that the film indicator gradually changes from white to red as the film is wound through.

After the repair of E or TCC magazine the speed and film contrast dials shall be checked. Adapt the magazine on a 203FE or a 205FCC camera and connect it to the Hasselblad Service Test System. Choose the function "203/205" from the main menu, then choose the function "MAGAZINE" from the sub menu. Turn the ISO dial and the film contrast dial from 12 to 6400 and from -4 to +3 respectively and back again.

Magazine A12, A16, A16S, A24



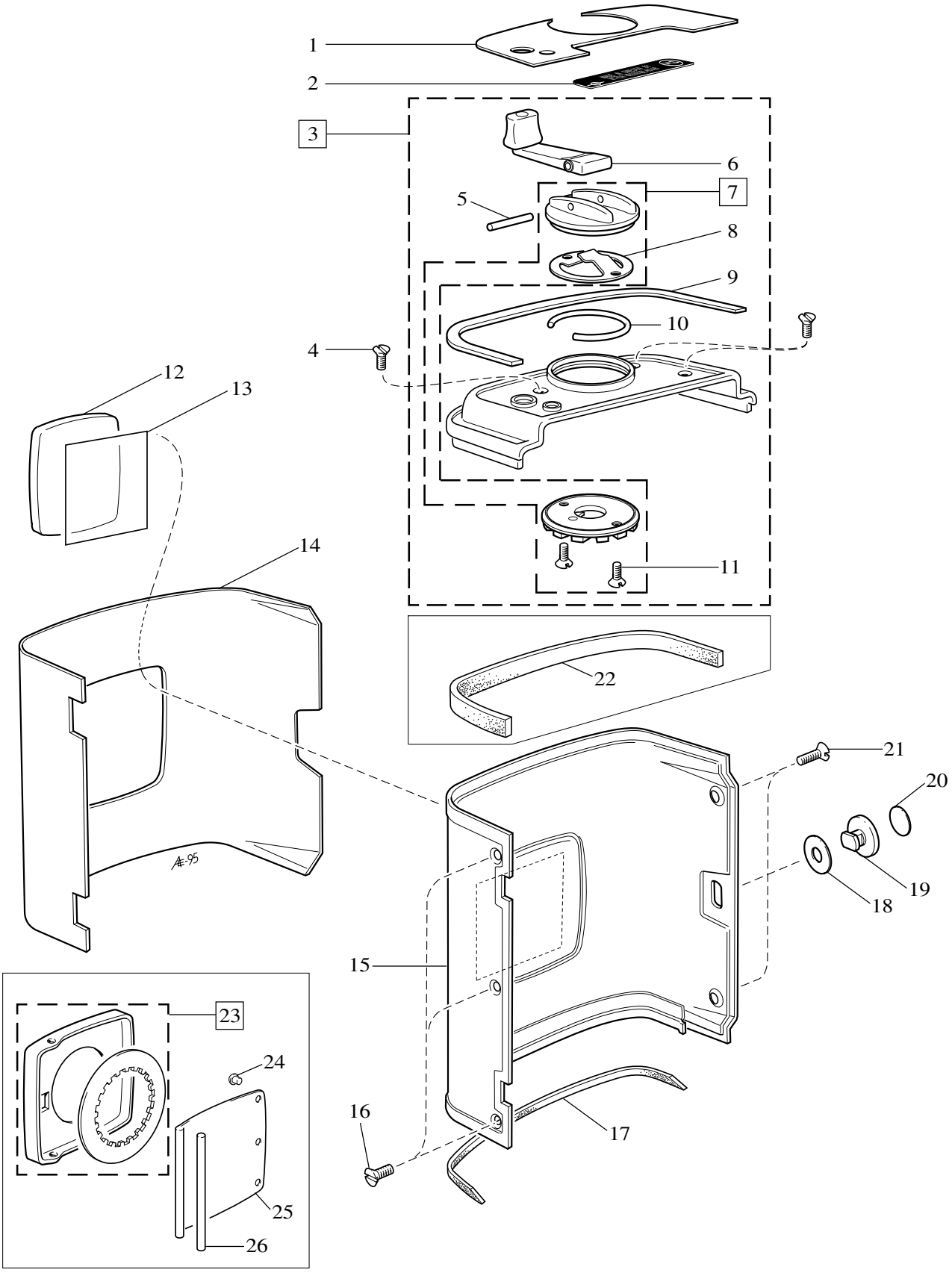
Magazine A12, A16, A16S, A24

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	810 927	Washer	
2	2	823 012	Screw	
3	1	308 485	Plate	
4	1	816 505	Spring	
5	1	12 819	Shaft	
6	2	814 527	Spring	
7	1	816 502	Spring	
8	1	22 715	Arm	
9	1	814 508	Spring	
10	1	22 277	Release arm	A12, A16, A16S
	1	22 315	Release arm	A24
11	1	810 926	Washer	
12	1	814 852	Spring	
13	1	812 005	Pin	
14	1	814 803	Spring	
15	1	13 754	Pin	
16	1	822 065	Stop screw	A12, A24
17	3	824 202	Screw	
18	1	13 806	Dial	A12
	1	13 849	Dial	A16, A16S
	1	13 819	Dial	A24
19	1	816 611	Spring	
20	1	22 371	Spacing gear	A12
	1	21 583	Spacing gear	A16, A16S
	1	22 841	Spacing gear	A16, Serial No. 31ET10601 - fwd
	1	21 484	Spacing gear	A24
21	1	21 548	Center mechanism	A12, A16, A16S
	1	21 483	Center mechanism	A24
22	1	22 716	Light seal	
23	1	22 745	Tape	
24	1	816 509	Spring	
25	1	13 031	Signal	
26	3	308 488	Tape washer	
27	1	22 747	Cover plate	
28	2	14 309	Light seal	
29	1	21 535	Exposure lock	
30	1	13 820	Spring	
31	2	13 821	Plate spring	
32	1	30 752	Magazine support	A12, A24
	1	30 751	Magazine support	A16
	1	30 516	Magazine support	A16S
33	1	22 710	Picture frame	A12
	1	22 712	Picture frame	A16
	1	21 587	Picture frame	A16S
34	4	833 105	Rivet	
35	2	309 407	Light seal	A16
36	2	309 408	Tape	A16
37	1	13 508	Foil	
38	1	13 067	Light trap	
39	1	Z41 068	Magazine slide	
40	1	812 107	Pin	
41	1	12 295	Ribbon	

Magazine A12, A16, A16S, A24

Pos No.	Pcs	Spare Part No.	Description	Remark
42	1	40 380	Outer plate	Please state serial No.
	1	13 804	Outer plate	Previous type outer plate,
43	9	823 015	Screw	please see Service Info 6/93
44	1	814 752	Spring	
45	1	20 843	Locking arm	
46	1	20 684	Locking spring	
47	1	814 307	Spring	
48	1	20 717	Return stop	
49	1	810 802	Washer	
50	1	12 209	Gear	
51	1	817 132	Clip	
52	1	823 012	Screw	
53	1	824 060	Screw	
54	1	21 568	Bracket	
55	1	21 494	Link	
56	1	14 185	Hub	
57	1	14 184	Spring	
58	1	13 030	Spring housing	
59	1	816 707	Spring	
60	1	814 303	Spring	
61	1	12 215	Gear	
62	1	308 426	Shaft	
63	1	308 109	Gear assembly	A12
	1	309 103	Gear assembly	A16, A16S
	1	311 101	Gear assembly	A24
64	1	21 490	Cover	Previous type cover
65	1	820 013	Screw	A16, A16S
66	1	22 171	Eccentric	A16, A16S

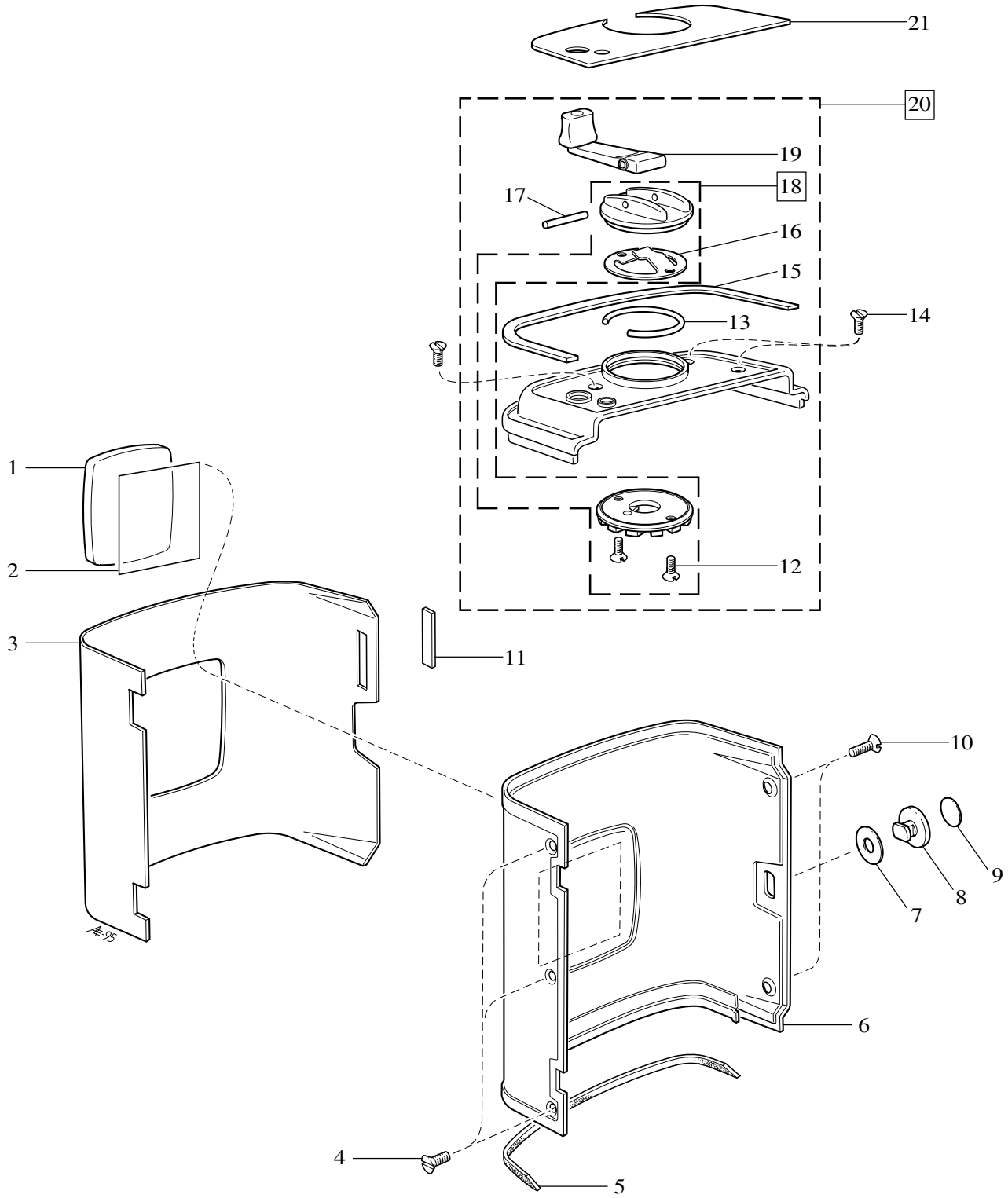
Magazine A12, A16, A16S, A24



Magazine A12, A16, A16S, A24

Pos No.	Pcs	Spare Part No.	Description	Remark	
1	1	13 080	Leather		
2	1	13 091	Name plate	A12	
	1	13 082	Name plate	A16	
	1	13 299	Name plate	A16S	
	1	13 748	Name plate	A24	
3	1	30 483	Cover right, complete	A12	chrome
	1	30 639	Cover right, complete	A12	black
	1	30 499	Cover right, complete	A16, A16S, A24	chrome
	1	30 640	Cover right, complete	A16, A16S, A24	black
4	3	823 012	Screw		
5	1	812 207	Pin		
6	1	13 810-1	Handle		
7	1	21 572-2	Crank mounting		
8	1	13 826	Spring		
9	1	12 290	Leather		
10	1	13 827	Tube		
11	2	823 015	Screw		
12	1	308 328	Film indicator		
13	1	308 507	Tape		
14	1	21 537	Leather		
15	1	308 023	Shell	Chrome	
	1	308 024	Shell	Black	
16	3	823 013	Screw		
17	1	22 409	Light seal		
18	1	810 761	Teflon washer		
19	1	22 356	Button		
20	1	22 440	Sign plate	A12	
	1	22 438	Sign plate	A16	
	1	22 439	Sign plate	A16S	
	1	22 441	Sign plate	A24	
21	2	823 017	Screw		
22	1	12 942	Light seal	Below Serial No. 30EI58263	
23	1	21 456	Cover	Previous type Film indicator	
24	3	832 203	Rivet		
25	1	21 418	Plate spring		
26	1	13 692	Shaft		

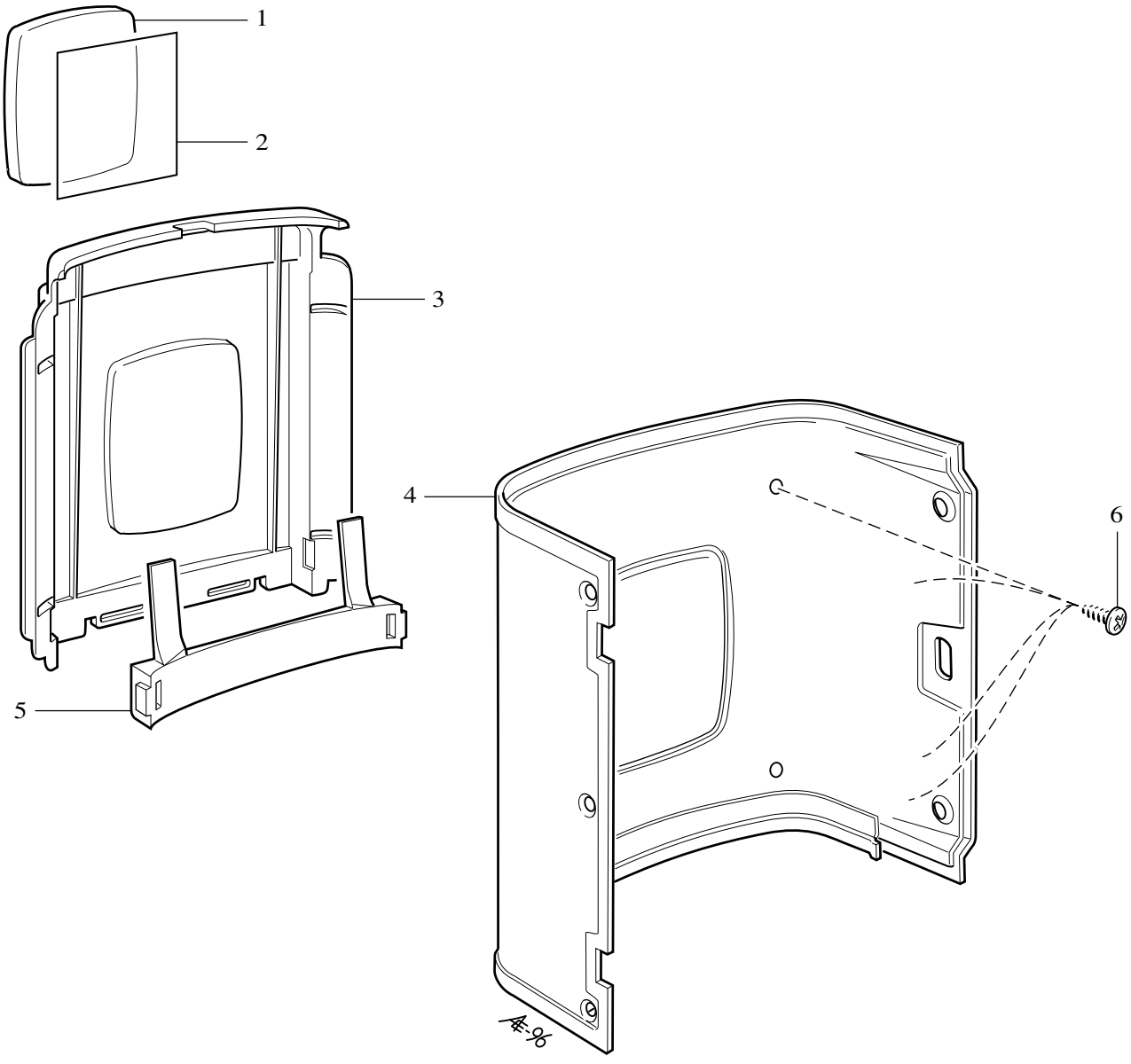
Magazine A12, A16, A24 (Modified 1996)



Magazine A12, A16, A24 (Modified 1996)

Pos No.	Pcs	Spare Part No.	Description	Remark	
1	1	308 328	Film indicator		
2	1	308 507	Tape		
3	1	30 312	Leather		
4	3	823 013	Screw		
5	1	22 409	Light seal		
6	1	308 023	Shell	Chrome	
	1	308 024	Shell	Black	
7	1	810 761	Teflon washer		
8	1	22 356	Button		
9	1	22 404	Leather		
10	2	823 017	Screw		
11	1	308 534	Name plate	A12	
	1	309 507	Name plate	A16	
	1	311 407	Name plate	A24	
12	2	823 015	Screw		
13	1	13 827	Tube		
14	3	823 012	Screw		
15	1	12 290	Leather		
16	1	13 826	Spring		
17	1	812 207	Pin		
18	1	21 572-2	Crank mounting		
19	1	13 810-1	Handle		
20	1	30 483	Cover right, complete	A12	chrome
	1	30 639	Cover right, complete	A12	black
	1	30 499	Cover right, complete	A16, A24	chrome
	1	30 640	Cover right, complete	A16, A24	black
21	1	308 411	Leather		

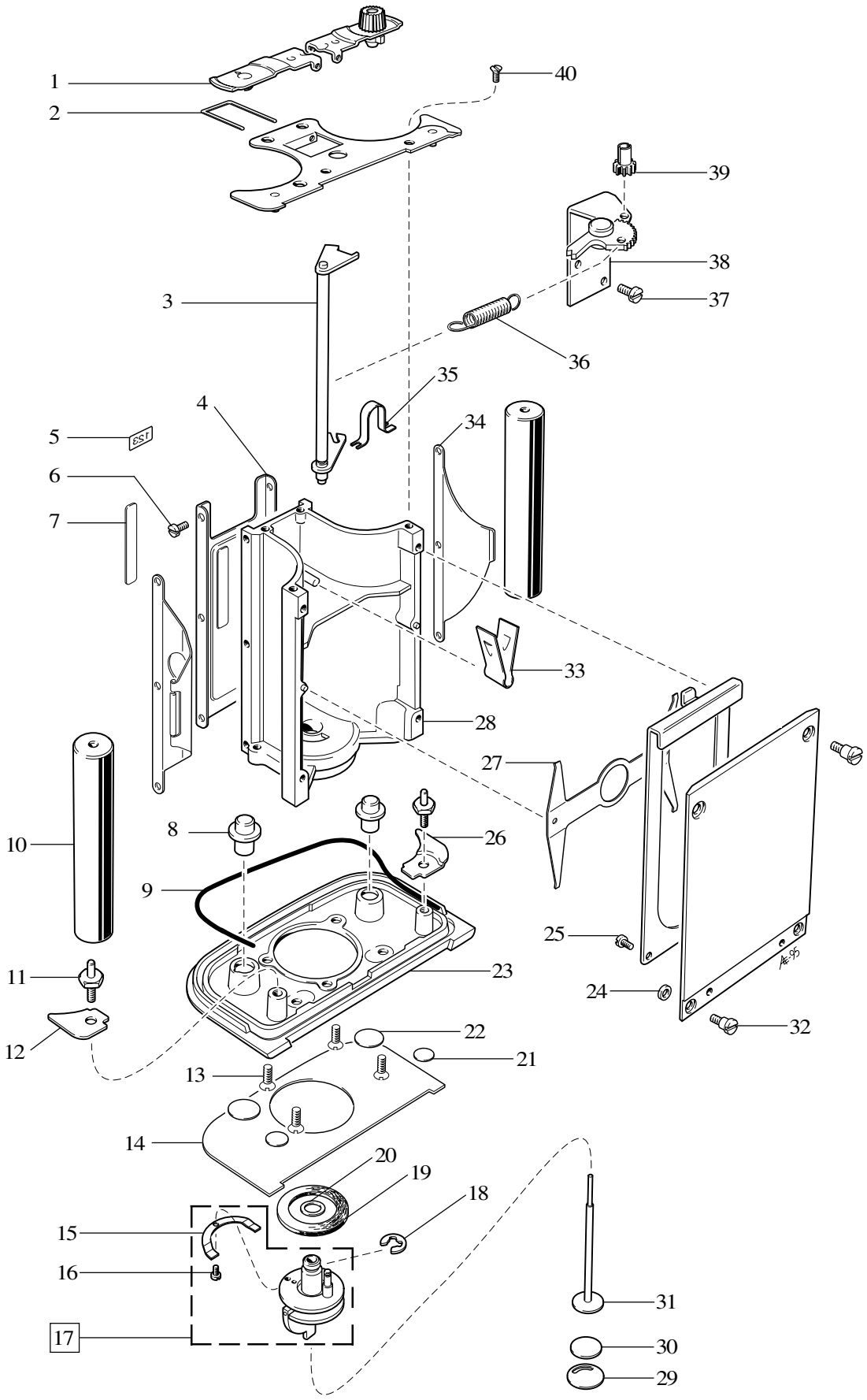
Magazine A12, A16, A24



Magazine A12, A16, A24

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	308 328	Film indicator	
2	1	308 507	Tape	
3	1	308 536	Dark slide holder	
4	1	308 015	Shell	Chrome
	1	308 016	Shell	Black
5	1	308 400	Support	
6	4	826 038	Screw	

Magazine A12, A24 Serial No. TR 133000 - RI 3250868

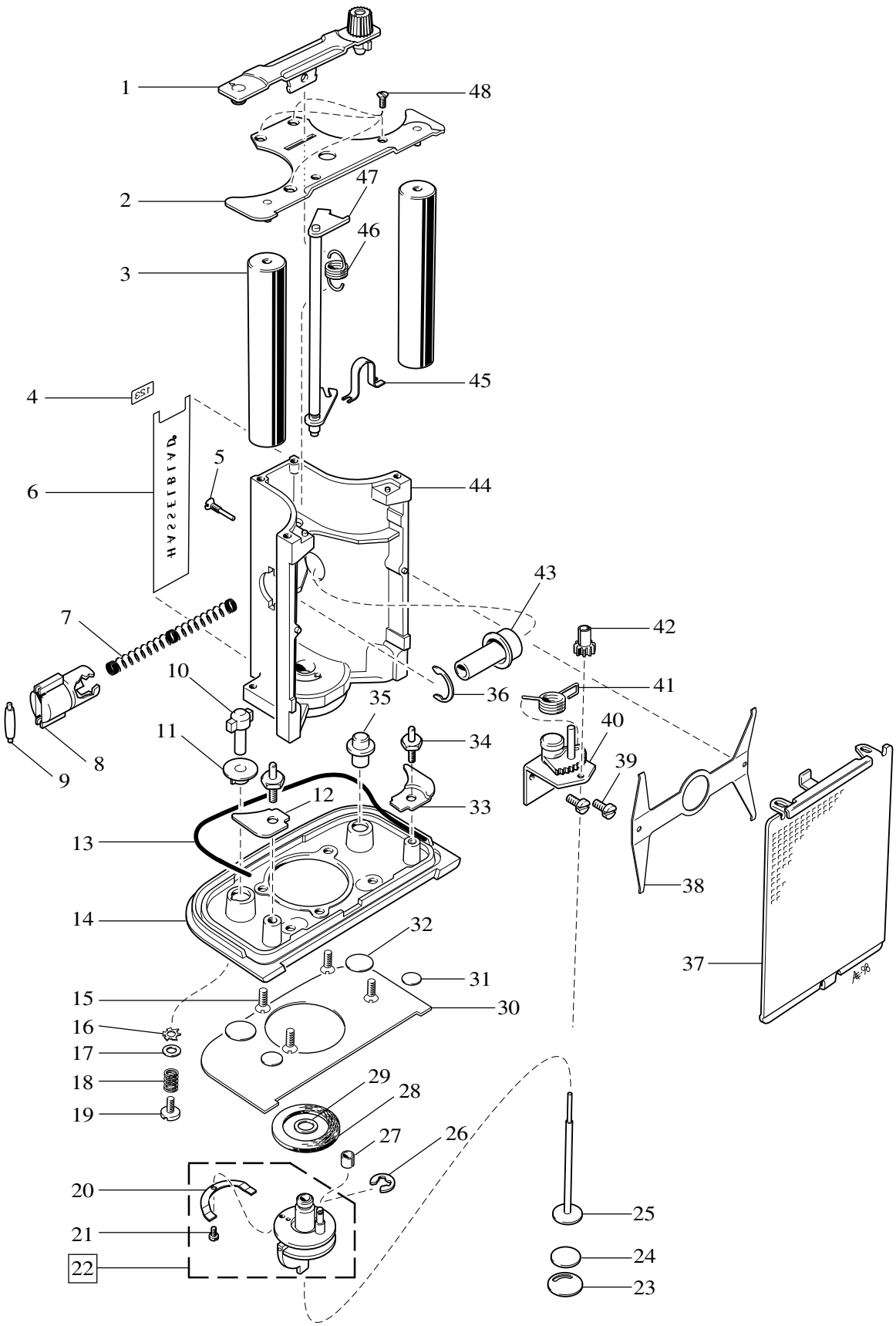


Magazine A12, A24 Serial No. 133000 - RI 3250868

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	13 797	Arm	
2	1	12 279	Holder	
3	1	13 060	Locking shaft	
4	1	13 795	Cover	
5	1	14 261	Number plate	Please state serial No.
6	4	820 225	Screw	
7	1	13 268	Name plate	
8	2	22 282	Spool center	
9	1	308 522	Sealing cord	
10	2	13 514	Roller	
11	2	12 273	Journal	
12	1	13 511	Film guide	
13	4	823 045	Screw	
14	1	12 289	Leather	
15	1	12 267	Spring	
16	1	821 060	Screw	
17	1	13 784	Lock	
18	1	817 140	Clip	
19	1	12 268	Felt ring	
20	1	810 925	Washer	0.1 mm
	1	810 928	Washer	0.2 mm
	1	810 933	Washer	0.5 mm
21	2	12 722-0.20	Shim	Alt. 12 722-0.10 or 12 722-0.30
22	2	14 093	Shim	
23	1	40 305	End plate	Chrome
	1	40 306	End plate	Black
24	2	810 403	Washer	0.2 mm
25	2	820 012	Screw	
26	1	13 510	Film guide	
27	1	13 512	Plate spring	
28	1	21 521-3	Intermed. part + End plate	Chrome
	1	22 129-3	Intermed. part + End plate	Black
29	1	13 792	Plate	
30	1	13 791	Window	
31	1	13 785	Film signal	
32	4	822 001	Screw	
33	1	12 307	Spring	
34	1	12 769	Spring	
35	1	12 540	Spring	
36	1	814 522	Spring	
37	2	820 014	Screw	
38	1	21 524	Bracket	
39	1	13 794	Gear	
40	4	824 033	Screw	

Please note!
Parts assortment for this type of spool holder is now reduced. Parts not specified above are not available any more.

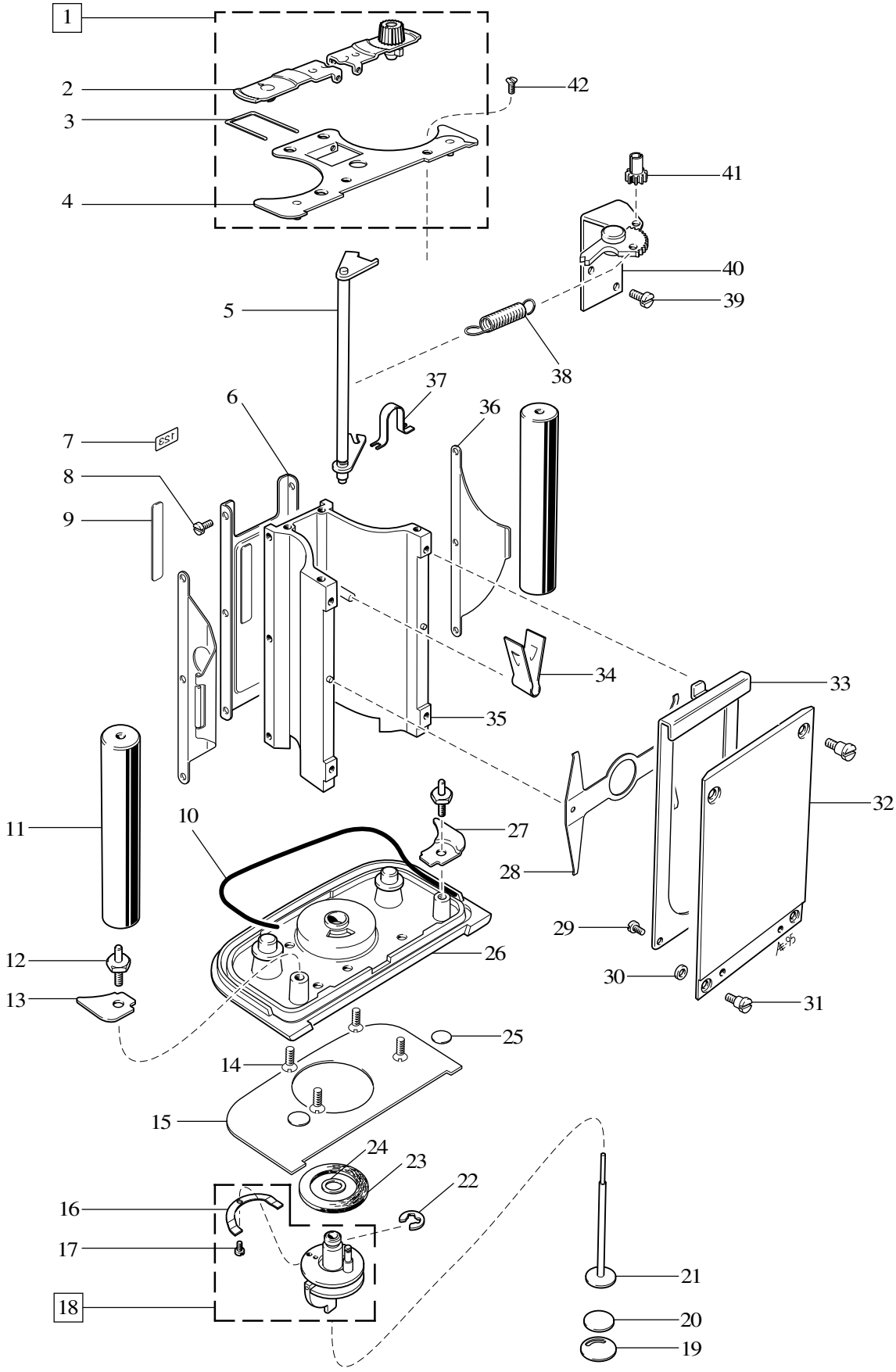
Magazine A12, A24 Serial No. RI 3250869 - forwards



Magazine A12, A24 Serial No. RI 3250869 - forwards

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	22 398	Take-up arm	
2	1	22 389	Plate	
3	2	13 514	Roller	
4	1	14 261	Number plate	Please state serial No.
5	1	22 408	Screw	
6	1	22 392	Name plate	
7	1	815 608	Spring	
8	1	40 318	Plunger	
9	1	22 406	Roller	
10	1	22 169	Hub	
11	1	22 168	Bushing	
12	1	13 511	Film guide	
13	1	308 522	Sealing cord	
14	1	40 305	End plate	Chrome
	1	40 306	End plate	Black
15	4	823 045	Screw	
16	1	13 436	Locking washer	
17	1	810 704	Washer	
18	1	815 901	Spring	
19	1	821 012	Screw	
20	1	12 267	Spring	
21	1	821 060	Screw	
22	1	13 784	Lock	
23	1	13 792	Plate	
24	1	13 791	Window	
25	1	22 382	Film signal	
26	1	817 140	Clip	
27	1	22 901	Sleeve	
28	1	12 268	Felt ring	
29	1	810 925	Washer	0.1 mm
	1	810 928	Washer	0.2 mm
	1	810 933	Washer	0.5 mm
30	1	12 289-1	Leather	
31	2	12 722-0.20	Shim	Alt. 12 722-0.10 or 12722-0.30
32	2	14 093	Shim	
33	1	13 510	Film guide	
34	2	12 273	Journal	
35	1	22 282	Spool center	
36	1	817 289	Clip	
37	1	22 388	Pressure plate	
38	1	13 512	Plate spring	
39	2	820 014	Screw	
40	1	22 379	Bracket	
41	1	816 616	Spring	
42	1	22 375	Gear	
43	1	308 356	Plunger	
44	1	22 401	Intermed. part + End plate	Chrome
	1	22 412	Intermed. part + End plate	Black
45	1	12 540	Spring	
46	1	814 952	Spring	
47	1	13 060	Locking shaft	
48	4	824 033	Screw	
		40 317	Spool holder, compl.	Chrome
		40 319	Spool holder, compl.	Black

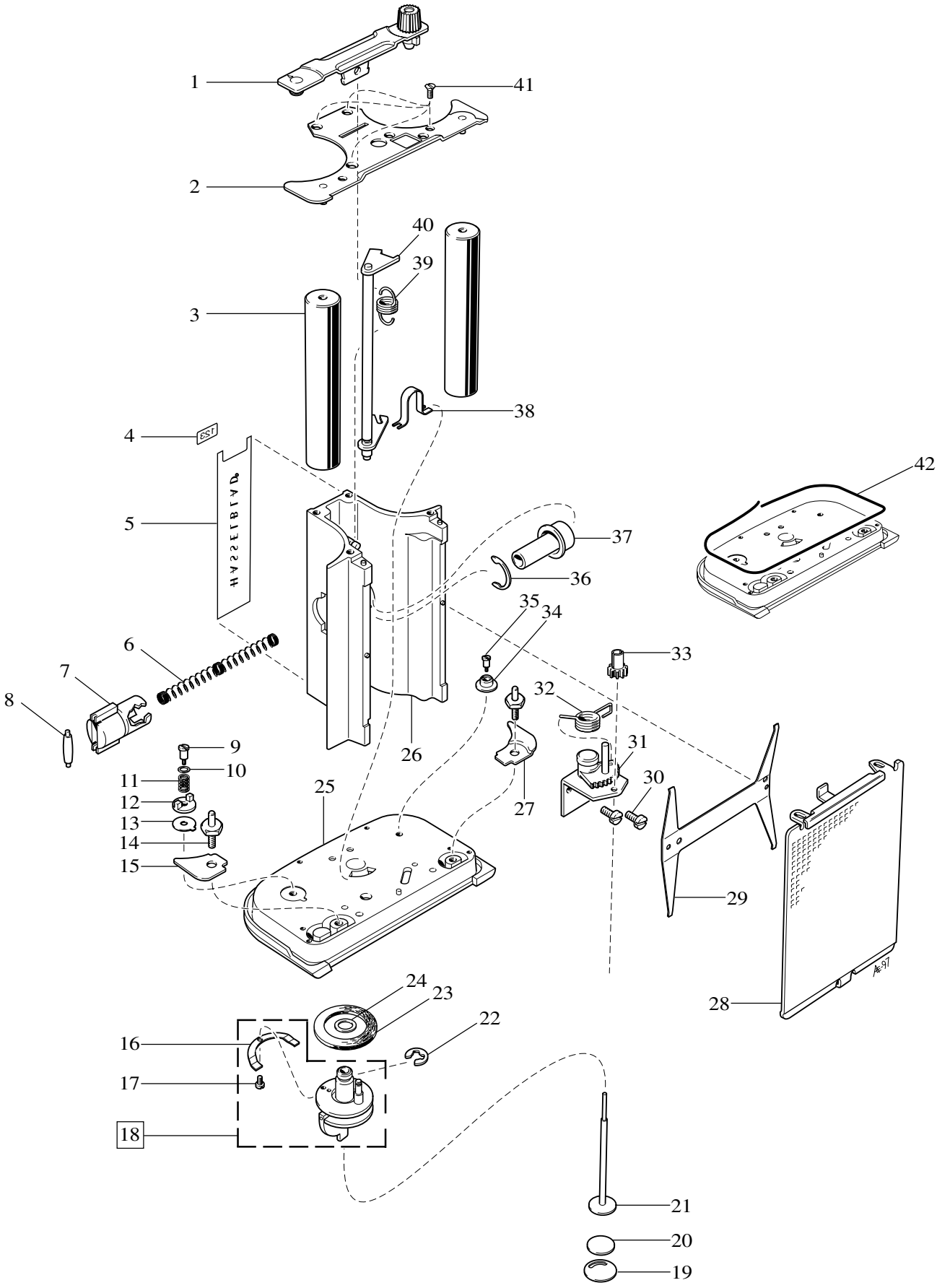
Magazine A16, A16S Serial No. UV 211701 - 31EP12394



Magazine A16, A16S Serial No. UV 211701 - 31EP12394

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	13 917	Plate, compl.	
2	1	13 797	Arm	
3	1	12 279	Holder	
4	1	13 916	Plate	
5	1	13 060	Locking shaft	
6	1	13 795	Cover	
7	1	14 261	Number plate	Please state serial No.
8	4	821 204	Screw	
9	1	13 268	Name plate	
10	1	308 522	Sealing cord	
11	2	13 514	Roller	
12	2	12 273	Journal	
13	1	13 912	Film guide	
14	4	823 045	Screw	
15	1	12 289	Leather	
16	1	12 267	Spring	
17	1	821 060	Screw	
18	1	13 784	Lock	
19	1	13 792	Plate	
20	1	13 791	Window	
21	1	13 785	Film signal	
22	1	817 140	Clip	
23	1	12 268	Felt ring	
24	1	810 925	Washer	0.1 mm
	1	810 928	Washer	0.2 mm
	1	810 933	Washer	0.5 mm
25	2	12 722-0.20	Shim	Alt. 12 722-0.10 or 12 722-0.30
26	1	90 394	End plate	Chrome
	1	90 458	End plate	Black
27	1	13 510	Film guide	
28	1	13 913	Plate spring	
29	2	820 012	Screw	
30	2	810 403	Washer	
31	4	822 001	Screw	
32	1	21 615	Pressure plate	
33	1	21 616	Guide plate	
34	1	12 307	Spring	
35	1	21 620	Intermed. part + End plate	Chrome
	1	22 131	Intermed. part + End plate	Black
36	1	12 769	Spring	
37	1	12 540	Spring	
38	1	814 522	Spring	
39	2	820 014	Screw	
40	1	21 524	Bracket	
41	1	13 794	Gear	
42	4	824 033	Screw	
		40 286	Spool holder, compl.	Black
				Please note! Parts assortment for this type of spool holder is now reduced. Parts not specified above are not available any more.

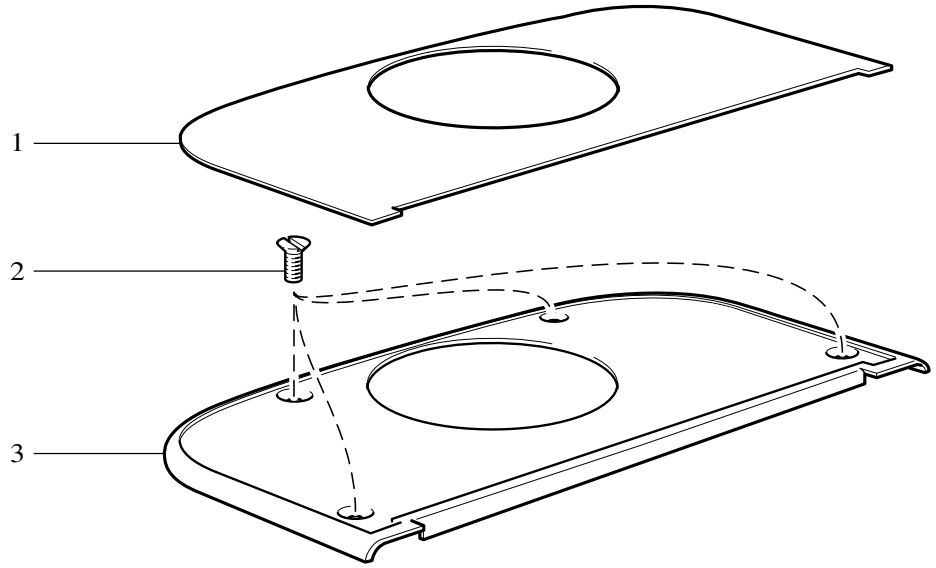
Magazine A16 (Serial No. 31EP12395 - forwards), A32

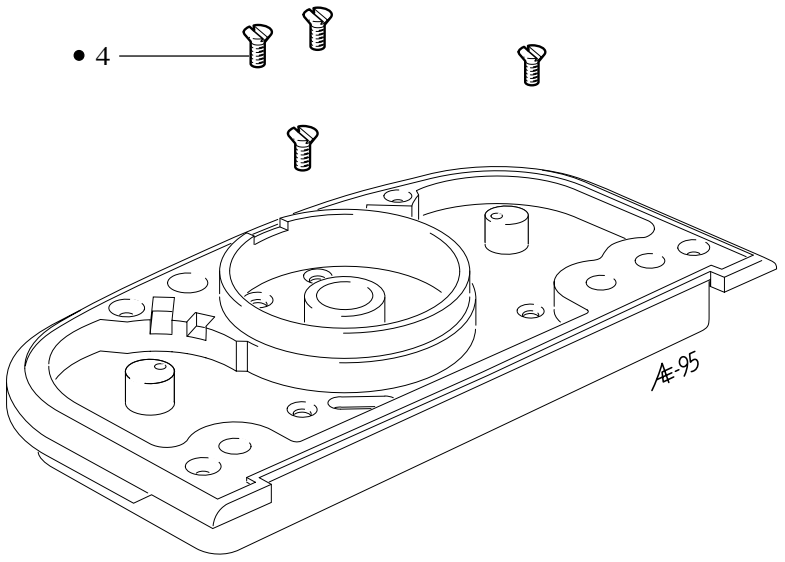


Magazine A16 (Serial No. 31EP12395 - forwards), A32

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	22 398	Take-up arm	
2	1	313 101	Plate	
3	2	13 514	Roller	
4	1	14 261	Number plate	Please state serial No.
5	1	308 504	Name plate	
6	1	815 608	Spring	
7	1	40 318	Plunger	
8	1	22 406	Roller	
9	1	822 438	Screw	
10	1	810 778	Washer	
11	1	815 512	Spring	
12	1	308 358	Coupling	
13	1	308 506	Washer	
14	2	12 273	Journal	
15	1	309 403	Film guide	
16	1	12 267	Spring	
17	1	821060	Screw	
18	1	308 101	Lock	
19	1	13 792	Plate	
20	1	13 791	Window	
21	1	22 382	Film signal	
22	1	817 140	Clip	
23	1	308 410	Felt ring	
24	1	810 925	Washer	0.1 mm
	1	810 928	Washer	0.2 mm
	1	810 933	Washer	0.5 mm
25	1	313 322	End plate	
26	1	309 506	Intermed. part	
27	1	308 345	Film guide	
28	1	309 102	Pressure plate	
29	1	13 913	Spring	
30	2	820 014	Screw	
31	1	22 379	Bracket	
32	1	816 616	Spring	
33	1	22 375	Gear	
34	1	308 408	Spool center	
35	1	822 433	Screw	
36	1	817 289	Clip	
37	1	308 356	Plunger	
38	1	12 540	Spring	
39	1	814 952	Spring	
40	1	308 103	Locking shaft	
41	4	824 033	Screw	
42	1	308 522	Sealing cord	
		309 022	Spool holder, complete	chrome
		309 023	Spool holder, complete	Black

Magazine A16 Serial (No. 31EP12395 - forwards)





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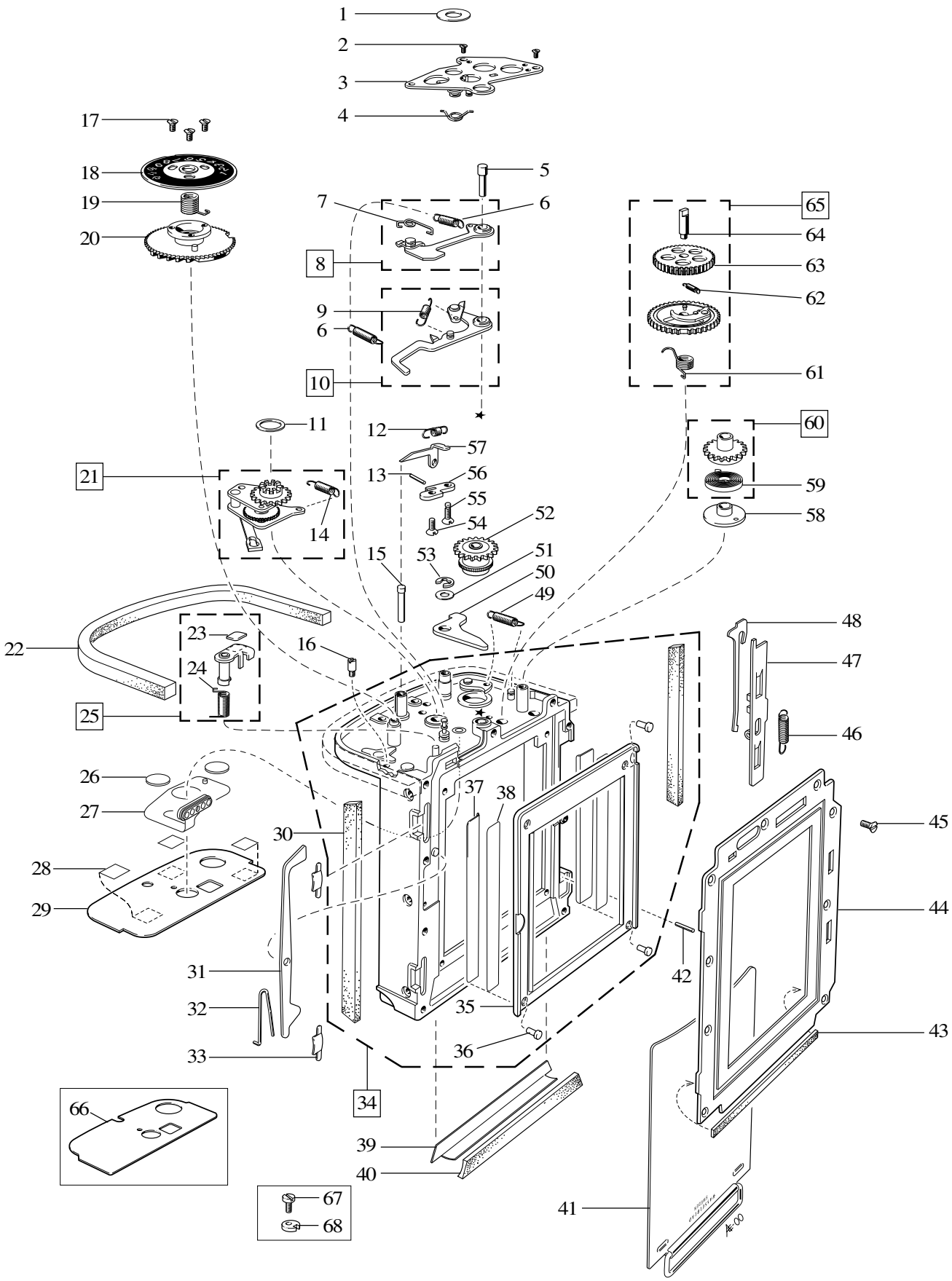
Magazine A16 (Serial No. 31EP12395 - forwards)

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	12 289	Leather	
2	4	823 435	Screw	
3	1	22 762	Cover	Chrome
	1	22 764	Cover	Black
4	4	823 450	Screw	
	4	823 650	Screw	Serial No. 31ET10171 - fwd please see Service Info 10/96

Magazine A12/16/24TCC, E12/16/24, E12CC



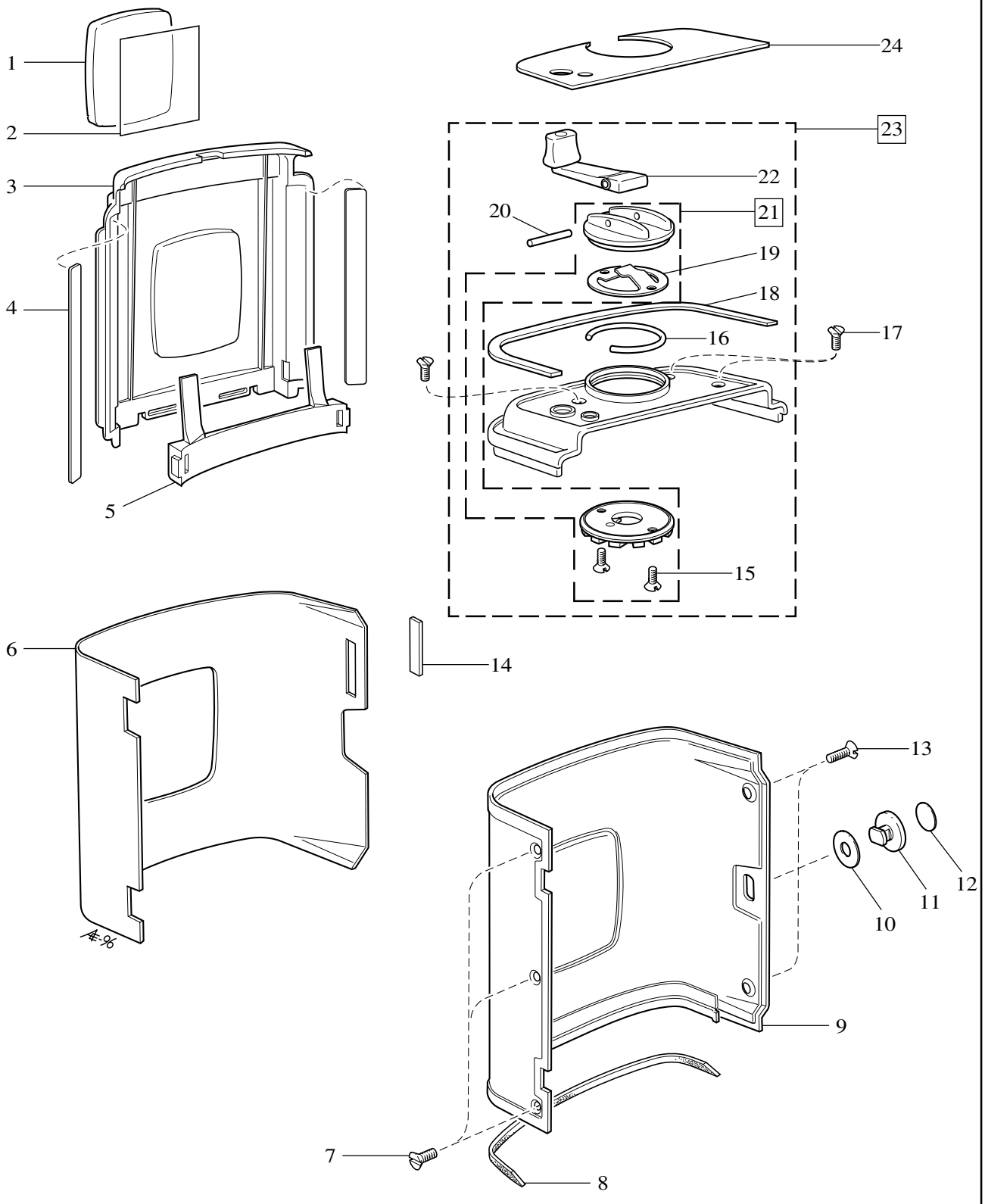
Magazine A12/A16/A24TCC, E12/16/24, E12CC

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	810 927	Washer	
2	2	823 012	Screw	
3	1	308 485	Plate	
4	1	816 505	Spring	
5	1	12 819	Shaft	
6	2	814 527	Spring	
7	1	816 502	Spring	
8	1	22 715	Arm	
9	1	814 508	Spring	
10	1	22 277	Release arm	12, 16
	1	22 315	Release arm	24
11	1	810 926	Washer	
12	1	814 852	Spring	
13	1	812 005	Pin	
14	1	814 803	Spring	
15	1	13 754	Pin	
16	1	822 065	Stop screw	12, 24
17	3	824 202	Screw	
18	1	13 806	Dial	12
	1	13 849	Dial	16
	1	13 819	Dial	24
19	1	816 611	Spring	
20	1	22 371	Spacing gear	12
	1	21 583	Spacing gear	16
	1	22 841	Spacing gear	E16, Serial No. 37ET10301 - fwd
	1	21 484	Spacing gear	24
21	1	21 548	Center mechanism	12, 16
	1	21 483	Center mechaniam	24
22	1	22 716	Light seal	
23	1	22 745	Tape	
24	1	816 509	Spring	
25	1	13 031	Signal	
26	2	308 496	Tape washer	
27	1	308 044	Contact flex	
28	3	308 488	Tape Washer	
29	1	22 747	Cover	
30	2	14 309	Light seal	
31	1	21 535	Exposure lock	
32	1	13 820	Spring	
33	2	13 821	Plate spring	
34	1	308 364	Magazine support	12, 24
	1	309 344	Magazine support	16
35	1	22 710	Picture frame	12, 24
	1	22 712	Picture frame	16
36	4	833 105	Rivet	
37	2	309 407	Light seal	16
38	2	309 408	Tape	16
39	1	13 508	Foil	
40	1	13 067	Light trap	
41	1	Z41 068	Magazine slide	
42	1	812 107	Pin	
43	1	12 295	Ribbon	

Magazine A12/A16/A24TCC, E12/16/24, E12CC

Pos No.	Pcs	Spare Part No.	Description	Remark
44	1	308 321	Outer plate	Please state serial No.
	1	308 106	Outer plate	Previous type outer plate
45	9	823 015	Screw	please see Service Info 6/93
46	1	814 752	Spring	
47	1	20 843	Locking arm	
48	1	20 684	Locking spring	
49	1	814 307	Spring	
50	1	20 717	Return stop	
51	1	810 802	Washer	
52	1	12 209	Gear	
53	1	817 132	Clip	
54	1	823 012	Screw	
55	1	824 060	Screw	
56	1	21 568	Bracket	
57	1	21 494	Link	
58	1	14 185	Hub	
59	1	14 184	Spring	
60	1	13 030	Spring housing	
61	1	816 707	Spring	
62	1	814 303	Spring	
63	1	12 215	Gear	
64	1	308 426	Shaft	
65	1	308 109	Gear assembly	12
	1	309 103	Gear assembly	16
	1	311 101	Gear assembly	24
66	1	308 402	Cover	Previous type cover
67	1	820 013	Screw	16
68	1	22 171	Eccentric	16

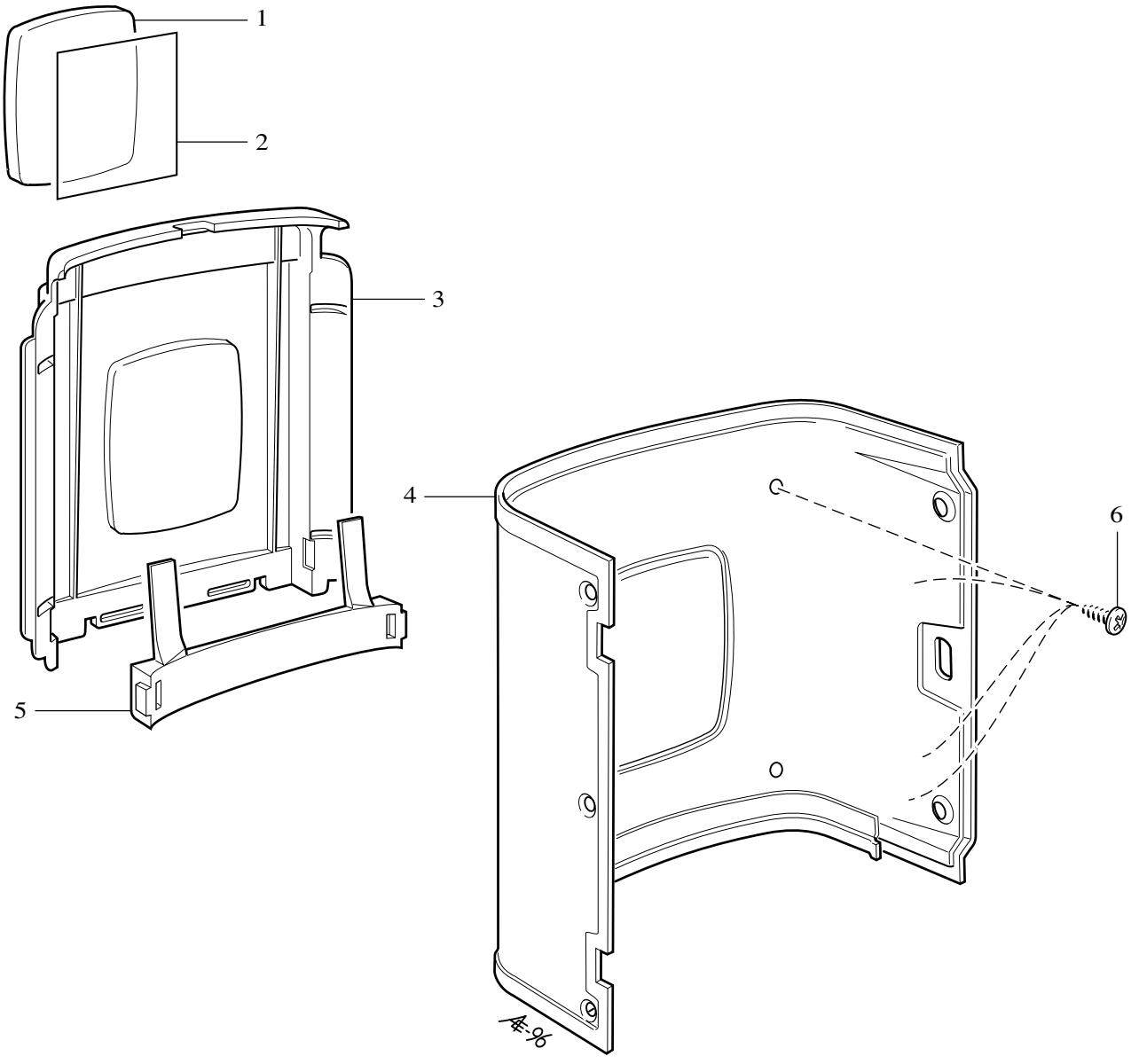
Magazine E12, E16, E24, E12CC



Magazine E12, E16, E24, E12CC

Pos No.	Pcs	Spare Part No.	Description	Remark	
1	1	308 328	Film indicator		
2	1	308 507	Tape		
3	1	308 366	Dark slide holder		
4	2	308 487	Tape		
5	1	308 400	Support		
6	1	30 312	Leather		
7	3	823 013	Screw		
8	1	22 409	Light seal		
9	1	308 023	Shell	Chrome	
	1	308 024	Shell	Black	
10	1	810 761	Teflon washer		
11	1	22 356	Button		
12	1	22 404	Leather		
13	2	823 017	Screw		
14	1	308 489	Name plate	E12	
	1	309 406	Name plate	E16	
	1	311 406	Name plate	E24	
	1	308 540	Name plate	E12CC	
15	2	823 015	Screw		
16	1	13 827	Tube		
17	3	823 012	Screw		
18	1	12 290	Leather		
19	1	13 826	Spring		
20	1	812 207	Pin		
21	1	21 572-2	Crank mounting		
22	1	13 810-1	Handle		
23	1	30 483	Cover right, complete	E12, E12CC	chrome
	1	30 639	Cover right, complete	E12, E12CC	black
	1	30 499	Cover right, complete	E16, E24	chrome
	1	30 640	Cover right, complete	E16, E24	black
24	1	308 411	Leather		

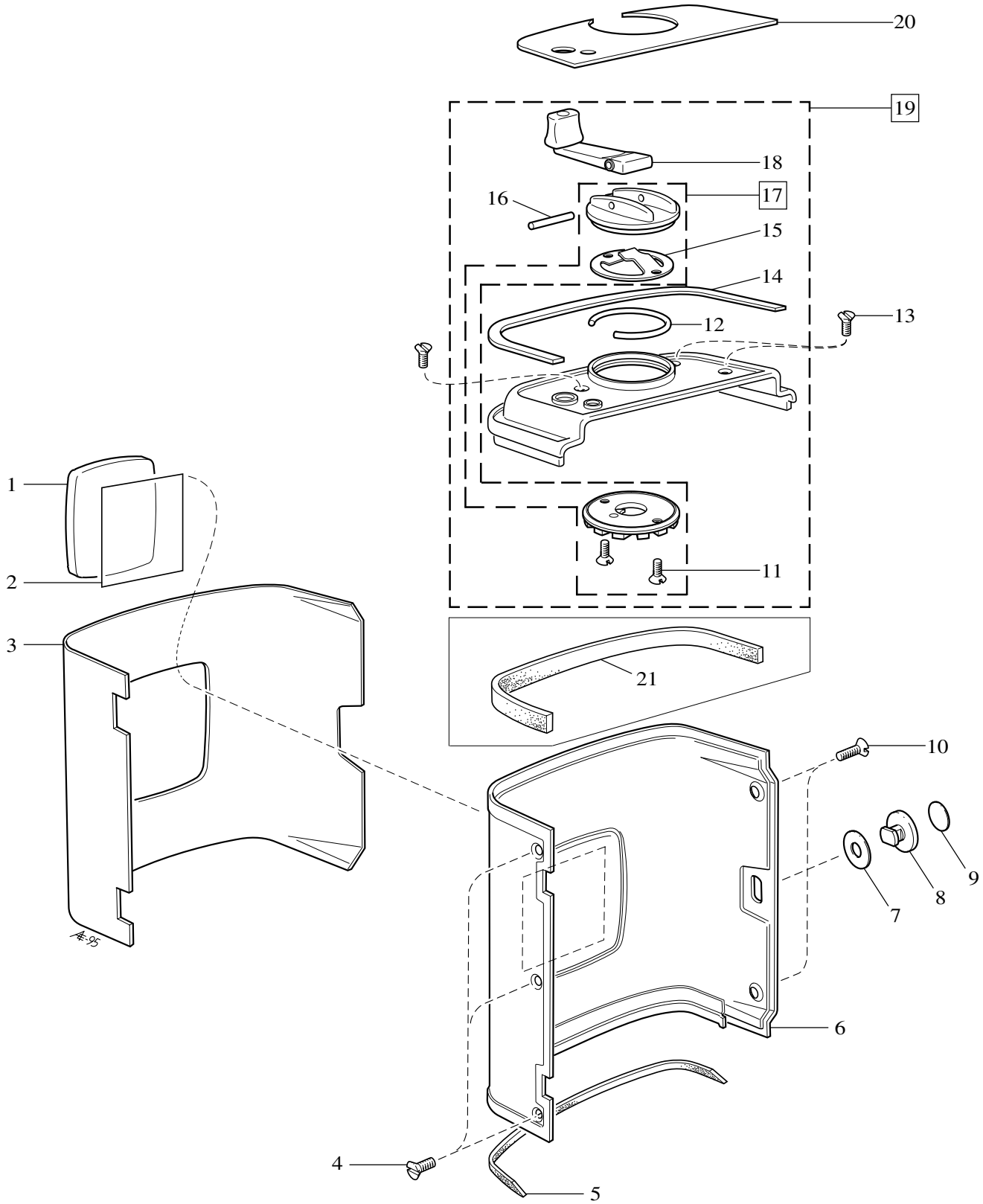
Magazine E12, E16, E24, E12CC (Modified 1996)



Magazine E12, E16, E24, E12CC (Modified 1996)

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	308 328	Film indicator	
2	1	308 507	Tape	
3	1	308 536	Dark slide holder	
4	1	308 015	Shell	Chrome
	1	308 016	Shell	Black
5	1	308 400	Support	
6	4	826 038	Screw	

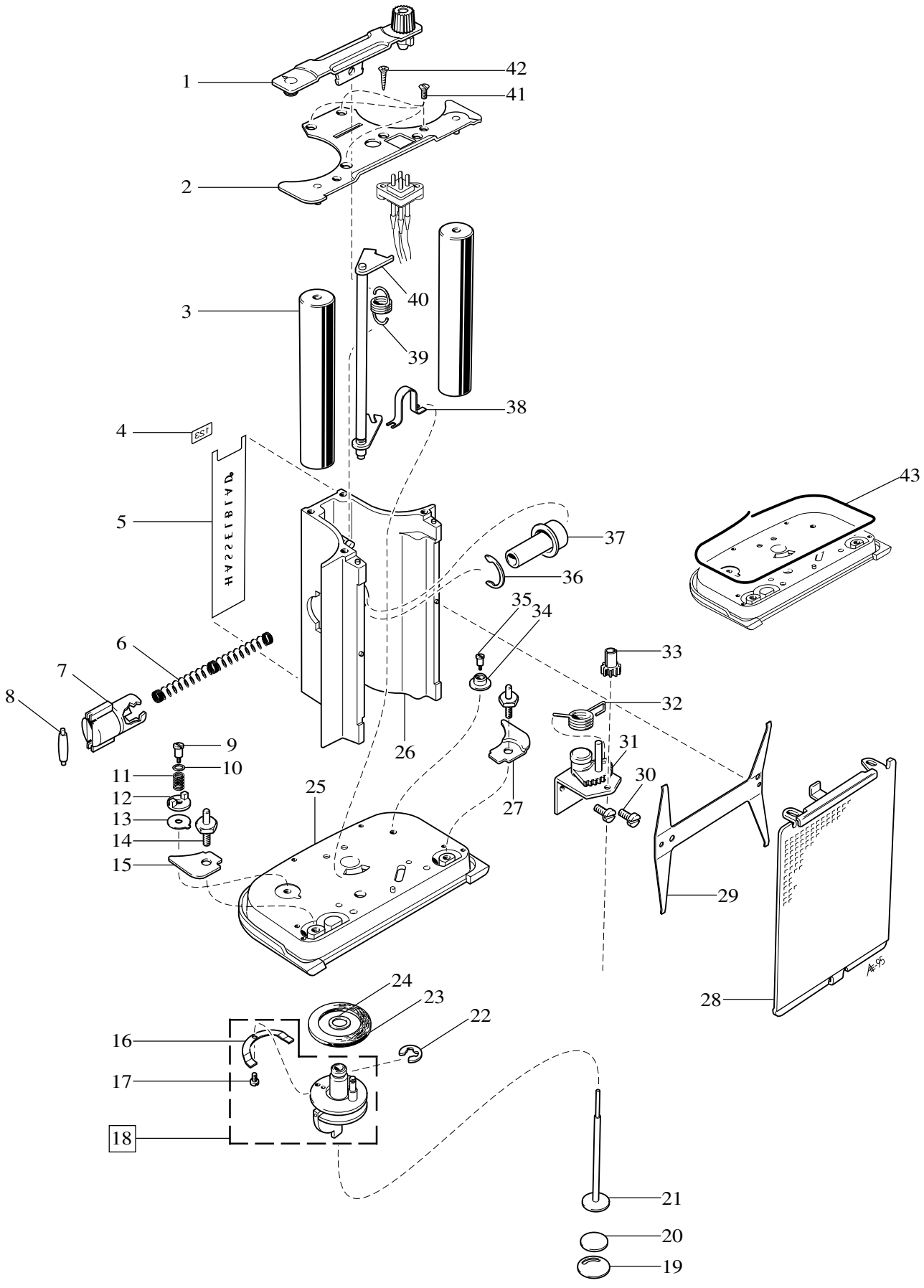
Magazine A12TCC, A16TCC, A24TCC



Magazine A12TCC, A16TCC, A24TCC

Pos No.	Pcs	Spare Part No.	Description	Remark	
1	1	308 328	Film indicator		
2	1	308 507	Tape		
3	1	21 537	Leather		
4	3	823 013	Screw		
5	1	22 409	Light seal		
6	1	308 023	Shell	Chrome	
	1	308 024	Shell	Black	
7	1	810 761	Teflon washer		
8	1	22 356	Button		
9	1	22 440	Sign plate	A12	
	1	22 438	Sign plate	A16	
	1	22 441	Sign plate	A24	
10	2	823 017	Screw		
11	2	823 015	Screw		
12	1	13 827	Tube		
13	3	823 012	Screw		
14	1	12 290	Leather		
15	1	13 826	Spring		
16	1	812 207	Pin		
17	1	21 572-2	Crank mounting		
18	1	13 810-1	Handle		
19	1	30 483	Cover right, complete	A12	chrome
	1	30 639	Cover right, complete	A12	black
	1	30 499	Cover right, complete	A16, A24	chrome
	1	30 640	Cover right, complete	A16, A24	black
20	1	308 411	Leather		
21	1	12 942	Light seal	Previous type Light seal	

Magazine A12/A16/A24TCC, E12/16/24 E12CC



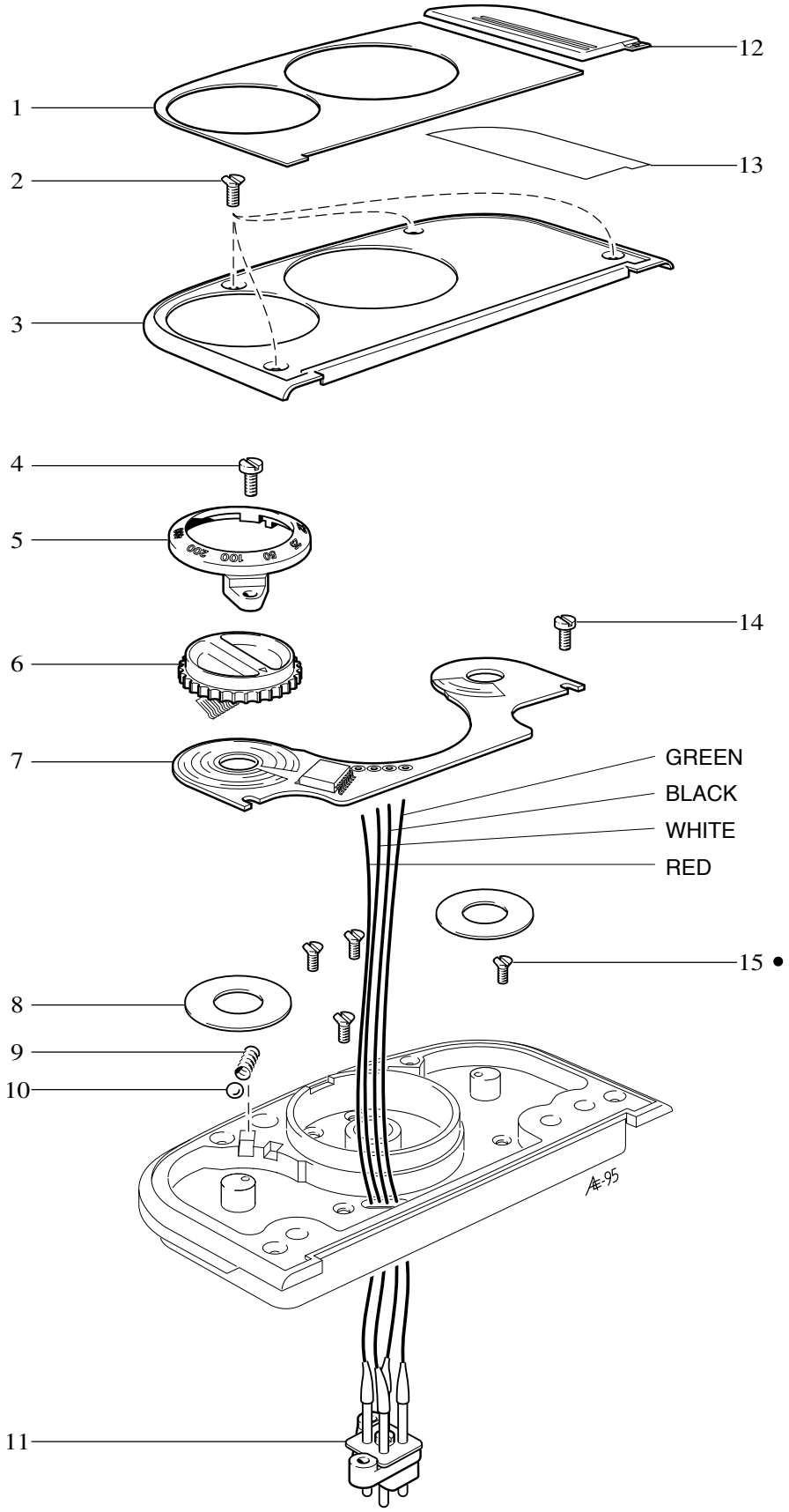
Magazine A12/A16/A24TCC, E12/16/24, E12CC

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	22 398	Take-up arm	
2	1	312 105	Plate	12, 24
	1	313 101	Plate	16
3	2	13 514	Roller	
4	1	14 261	Number plate	Please state serial No.
5	1	308 504	Name plate	
6	1	815 608	Spring	
7	1	40 318	Plunger	
8	1	22 406	Roller	
9	1	822 438	Screw	
10	1	810 778	Washer	
11	1	815 512	Spring	
12	1	308 358	Coupling	
13	1	308 506	Washer	
14	2	12 273	Journal	
15	1	308 346	Film guide	12, 24
	1	309 403	Film guide	16
16	1	12 267	Spring	
17	1	821 060	Screw	
18	1	308 101	Lock	
19	1	13 792	Plate	
20	1	13 791	Window	
21	1	22 382	Film signal	
22	1	817 140	Clip	
23	1	308 410	Felt ring	
24	1	810 925	Washer	0.1 mm
	1	810 928	Washer	0.2 mm
	1	810 933	Washer	0.5 mm
25	1	312 323	End plate	12, 24
	1	313 322	End plate	16
26	1	308 516	Intermed. part	12, 24
	1	309 506	Intermed. part	16
27	1	308 345	Film guide	
28	1	308 104	Pressure plate	12, 24
	1	309 102	Pressure plate	16
29	1	13 913	Spring	
30	2	820 014	Screw	
31	1	22 379	Bracket	
32	1	816 616	Spring	
33	1	22 375	Gear	
34	1	308 408	Spool center	
35	1	822 433	Screw	
36	1	817 289	Clip	
37	1	308 356	Plunger	
38	1	12 540	Spring	
39	1	814 952	Spring	
40	1	308 103	Locking shaft	
41	4	824 033	Screw	
42	2	826 040	Screw	
43	1	308 522	Sealing cord	

Magazine A12/A16/A24TCC, E12/16/24, E12CC

Pos No.	Pcs	Spare Part No.	Description	Remark	
		308 111	Spool holder complete	12/24TCC, E12CC	chrome
		308 112	Spool holder complete	12/24TCC, E12CC	black
		309 111	Spool holder complete	16TCC	chrome
		309 112	Spool holder complete	16TCC	black
		308 025	Spool holder complete	E12, E24	chrome
		308 026	Spool holder complete	E12, E24	black
		309 024	Spool holder complete	E16	chrome
		309 025	Spool holder complete	E16	black

Magazine E12, E16, E24



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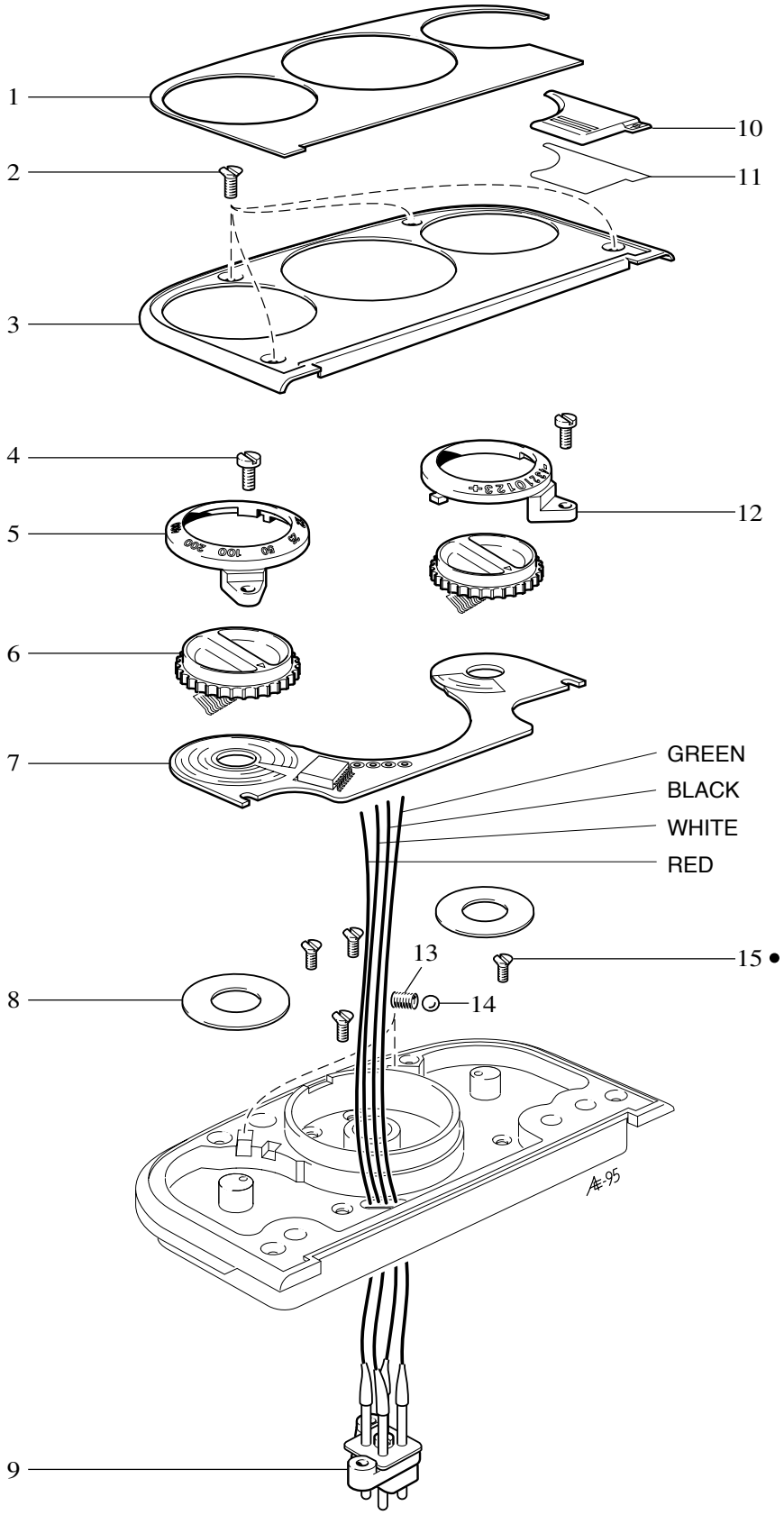
Magazine E12, E16, E24

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	308 521	Leather	
2	4	823 435	Screw	
3	1	308 519	Cover	Chrome
	1	308 520	Cover	Black
4	1	820 445	Screw	
5	1	308 347	ISO indicator	
6	1	308 107	Dial	
7	1	308 524	Circuit board	
8	2	308 495	Tape	
9	1	815 604	Spring	
10	1	809 020	Steel ball	
11	1	308 043	Contact assembly	
12	1	308 368	Rubber plate	
13	1	308 523	Tape	
14	1	820425	Screw	
15	4	823450	Screw	
	4	823650	Screw	E12, Serial No. 36ET10461 - fwd E16, Serial No. 37ET10172 - fwd E24, Serial No. 38ET10201 - fwd please see Service Info 10/96

Magazine A12TCC, A16TCC, A24TCC
E12CC



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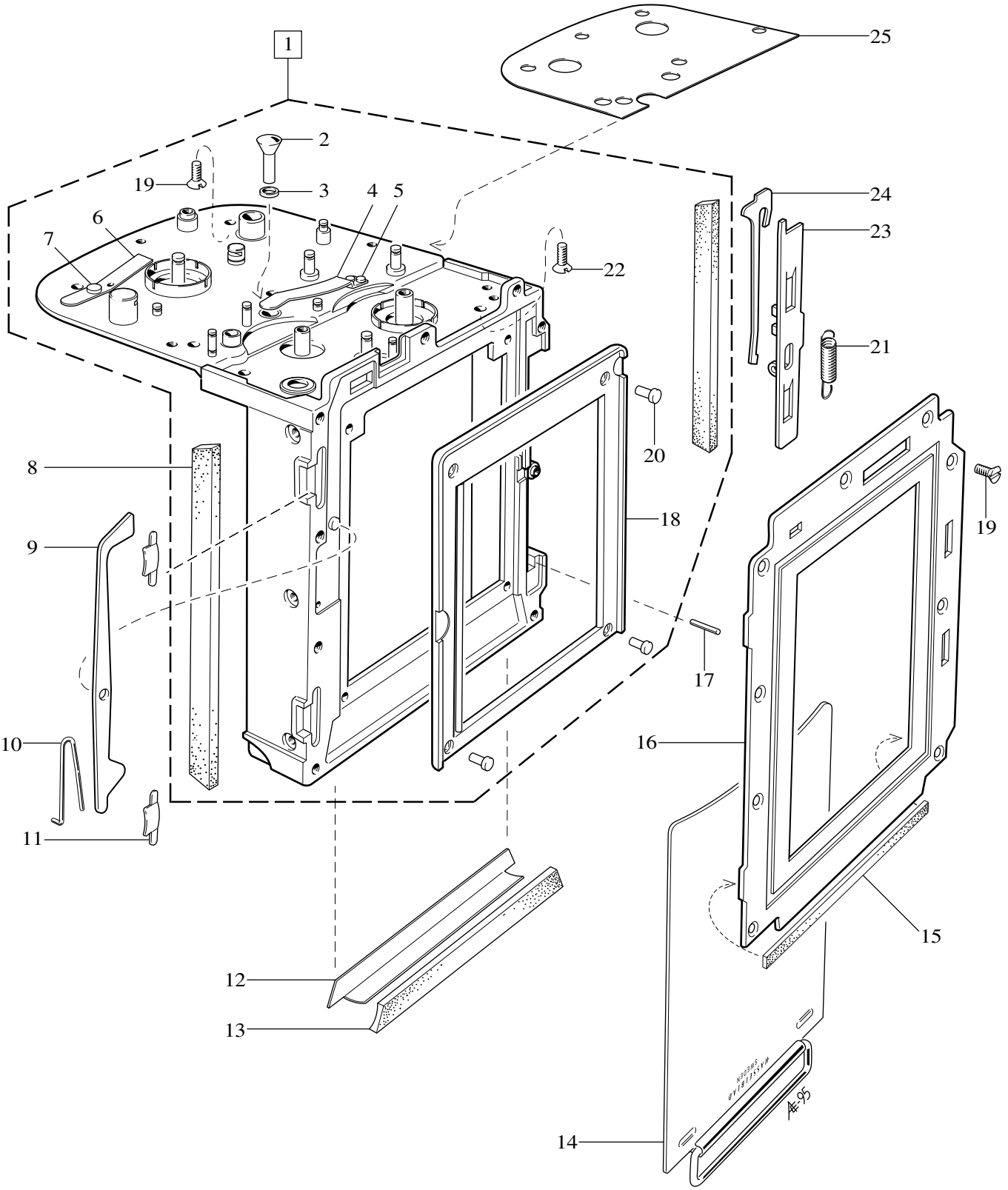
Magazine A12TCC, A16TCC, A24TCC, E12CC

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	308 403	Leather	
2	4	823 435	Screw	
3	1	308 431	Cover	Chrome
	1	308 432	Cover	Black
4	2	820 445	Screw	
5	1	308 347	ISO indicator	
6	2	308 107	Dial	
7	1	308 460	Circuit board	
8	2	308 495	Tape	
9	1	308 043	Contact assembley	
10	1	309 343	Rubber plate	
11	1	308 492	Tape	
12	1	308 348	Indicator	
13	2	815 604	Spring	
14	2	809 020	Steel ball	
15	4	823 450	Screw	
	4	823 650	Screw	E12CC, Serial No. 35ET10001 - fwd please see Service Info 10/96

Magazine 70



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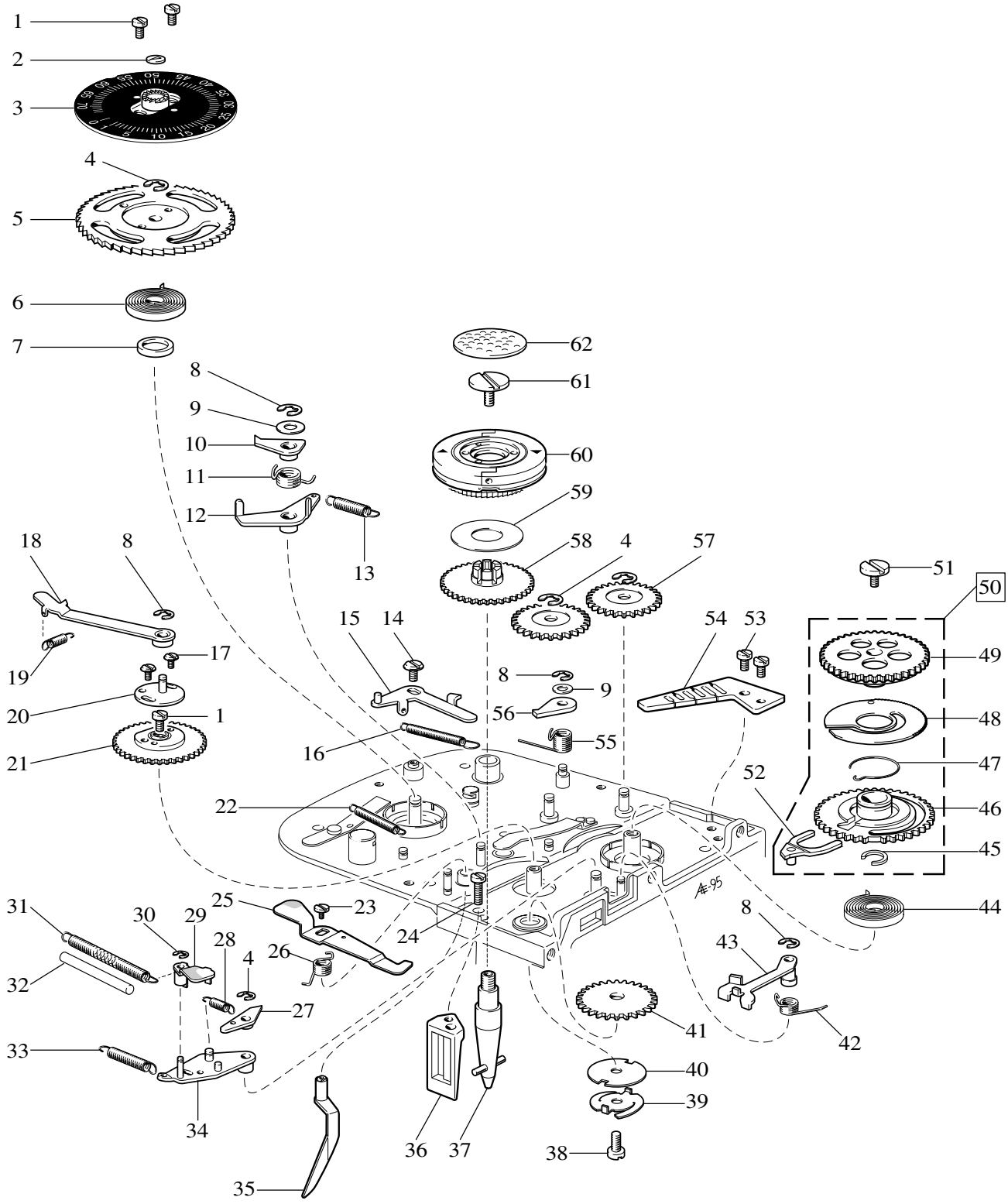
Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	30 759	Magazine support	
	1	30 510	Magazine support	Previous type magazine support please see Service Info 6/93.
2	1	13 686	Zero button	
3	1	810 611	Washer	
4	1	21 413	Plate spring	
5	2	831 305	Rivet	
6	1	21 414	Return stop	
7	1	835 325	Pin	
8	2	14 309	Light seal	
9	1	21 535	Exposure lock	
10	1	13 820	Spring	
11	2	13 821	Plate spring	
12	1	13 508	Foil	
13	1	13 067	Light trap	
14	1	Z410 68	Magazine slide	
15	1	12 295	Ribbon	
16	1	40 212	Outer plate	Please state serial No.
	1	13 911	Outer plate	Previous type outer plate please see Service Info 6/93.
17	1	812 107	Pin	
18	1	22 710	Picture frame	
19	13	823 015	Screw	
20	4	833 105	Rivet	
21	1	814 752	Spring	
22	1	823 017	Screw	
23	1	20 843	Locking arm	
24	1	20 684	Locking spring	
25	1	30 676	Cover	

Magazine 70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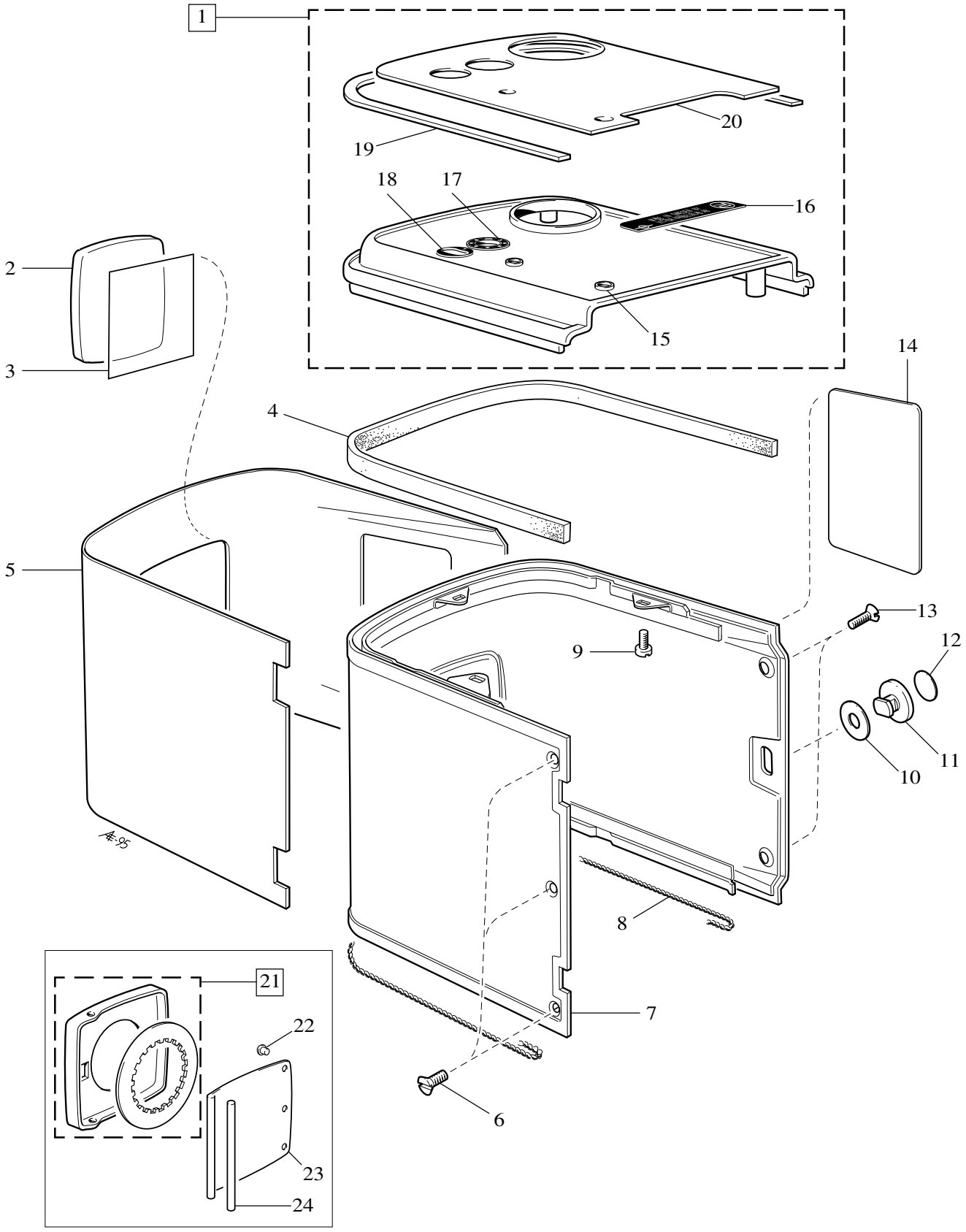
Magazine 70

Pos No.	Pcs	Spare Part No.	Description	Remark
1	3	821 004	Screw	
2	1	13 868	Name plate	
3	1	13 670	Number disc	
4	4	817 119	Clip	
5	1	13 669	Counter wheel	
6	1	21 407	Coil spring	
7	1	810 903	Washer	
8	4	817 115	Clip	
9	2	810 506	Washer	
10	1	13 679	Pawl	
11	1	816 708	Spring	
12	1	13 672	Zero-lever	
13	1	814 307	Spring	
14	1	821 035	Screw	
15	1	13 671	Catch	
16	1	814 518	Spring	
17	2	821 205	Screw	
18	1	13 673	Arm	
19	1	814 507	Spring	
20	1	13 666	Cam	
21	1	13 665	Gear	
22	1	814 309	Spring	
23	1	821 230	Screw	
24	1	820 020	Screw	
25	1	21 408	Film signal	
26	1	816 710	Spring	
27	1	13 676	Catch	
28	1	814 303	Spring	
29	1	13 677	Exposure signal	
30	1	817 112	Clip	
31	1	814 310	Spring	
32	1	812 208	Pin	
33	1	814 515	Spring	
34	1	13 675	Cam plate	
35	1	13 674	Film feeler	
36	1	21 409	Film guide	
37	1	13 668	Film feeder	
38	1	821 830	Screw	
39	1	21 434	Spring	
40	1	21 433	Washer	
41	1	21 400	Gear	
42	1	816 711	Spring	
43	1	13 678	Signal catch	
44	1	21 406	Coil spring	
45	1	13 700	Clip	
46	1	21 447	Gear, lower	
47	1	13 699	Spring	
48	1	13 681	Cam disc	
49	1	21 458	Return coupling	
50	1	21 532	Gear, top	
51	1	821 011	Screw	
52	1	13 682	Catch	
53	2	820 014	Screw	

Magazine 70

Pos No.	Pcs	Spare Part No.	Description	Remark
54	1	21 432	Return stop	
55	1	816 713	Spring	
56	1	13 687	Catch	
57	2	13 667	Gear	
58	1	21 403	Gear	
59	1	810 927	Washer	
60	1	21 457	Handle	
61	1	821 013	Screw	
62	1	12 288	Leather	

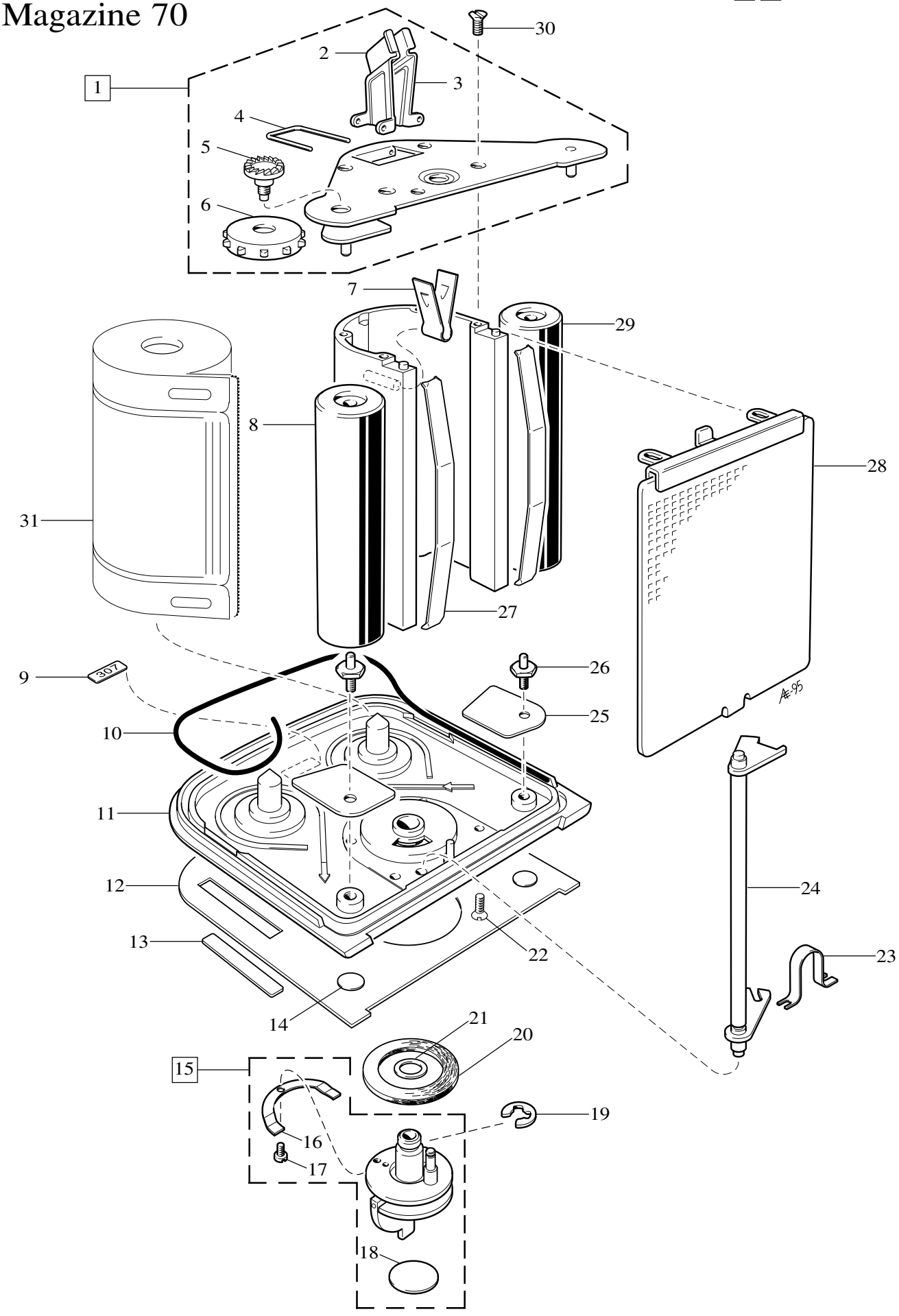
Magazine 70



Magazine 70

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	21 459	Cover right, complete	Chrome
	1	22 119	Cover right, complete	Black
2	1	308 328	Film indicator	
3	1	308 507	Tape	
4	1	12 942	Light seal	
5	1	30 459	Leather	
6	3	823 013	Screw	
7	1	50 115	Magazine shell	Chrome
	1	50 147	Magazine shell	Black
8	1	22 409	Sealing cord	
9	3	820 013	Screw	
10	1	810 761	Teflon washer	
11	1	22 356	Button	
12	1	22 442	Sign plate	
13	3	823 017	Screw	
14	1	21 410	Memo tablet	
15	2	12 492	Window	
16	1	13 702	Name plate	
17	1	21 420	Ring	
18	1	13 680	Counter window	
19	1	21 423	Leather	
20	1	21 422	Leather	
21	1	21 456	Cover	Previous type film indicator
22	3	832 203	Rivet	
23	1	21 418	Plate spring	
24	1	13 692	Shaft	

Magazine 70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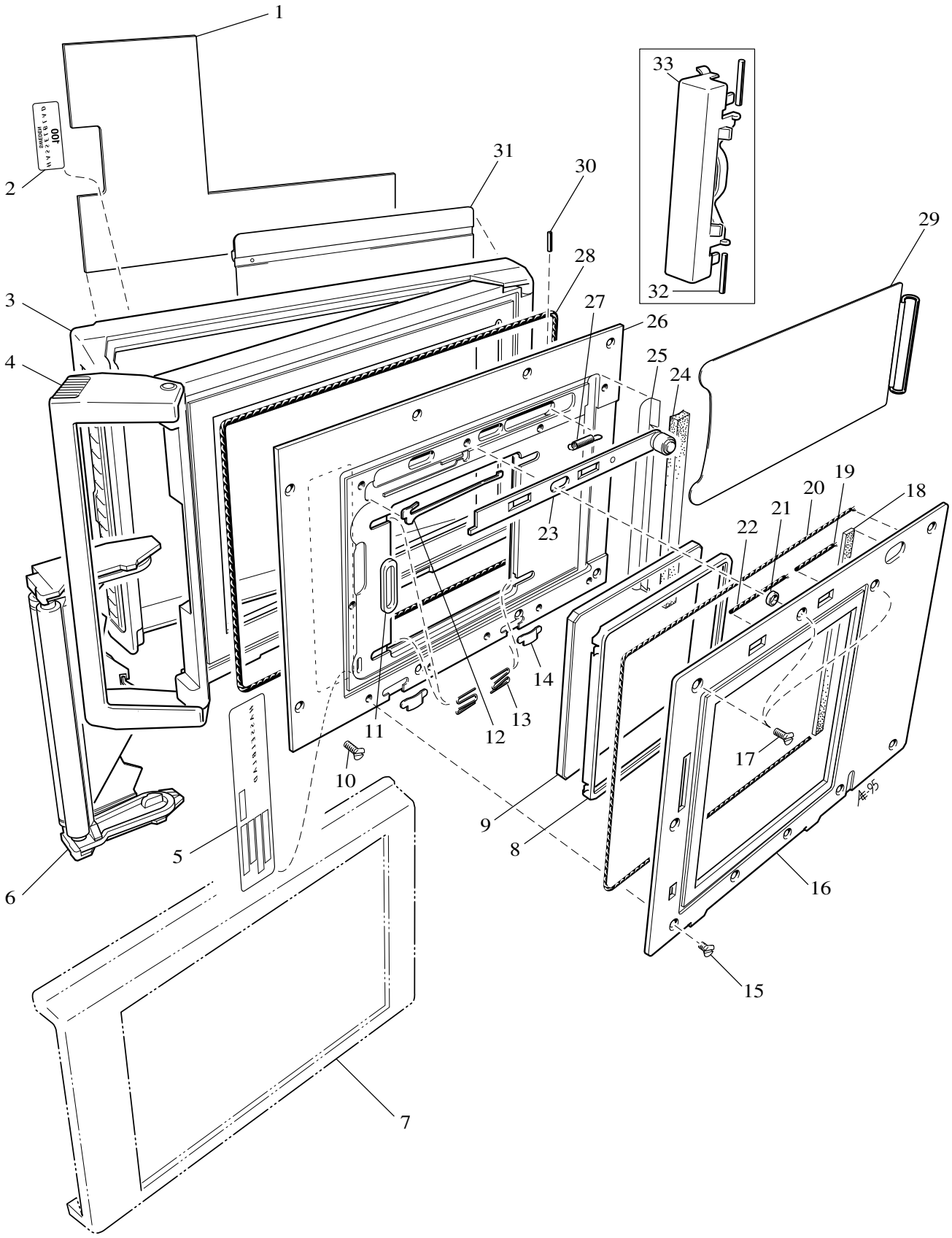
Magazine 70

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	21 394	Plate, compl.	
2	1	21 375	Holder	
3	1	21 376	Holder	
4	1	13 650	Fastening	
5	1	21 378	Coupling	
6	1	21 377	Tooth wheel	
7	1	13 655	Spring	
8	1	13 660	Roller, short	
9	1	14 261	Number plate	
10	1	14 183-2	Sealing cord	
11	1	21 396	Endplate + Intermed. part	Chrome
	1	22 121	Endplate + Intermed. part	Black
12	1	21 387	Leather	
13	1	13 268	Name plate	
14	2	12 722-0.30	Shim	
15	1	12 728	Lock	
16	1	12 267	Spring	
17	1	821 060	Screw	
18	1	12 288	Leather	
19	1	817 140	Clip	
20	1	12 268	Felt ring	
21	1	810 925	Washer	0.1 mm
	1	810 928	Washer	0.2 mm
	1	810 933	Washer	0.5 mm
22	5	824 611	Screw	
23	1	12 540	Spring	
24	1	13 662	Locking shaft	
25	2	21 389	Film guide	
26	2	12 273	Journal	
27	2	21 388	Plate spring	
28	1	13 659	Pressure plate	
29	2	13 661	Roller, long	
30	4	823 015	Screw	
31			Film cassette	Code No. 51039
		40 211	Spool holder, compl.	Chrome
		40 282	Spool holder, compl.	Black

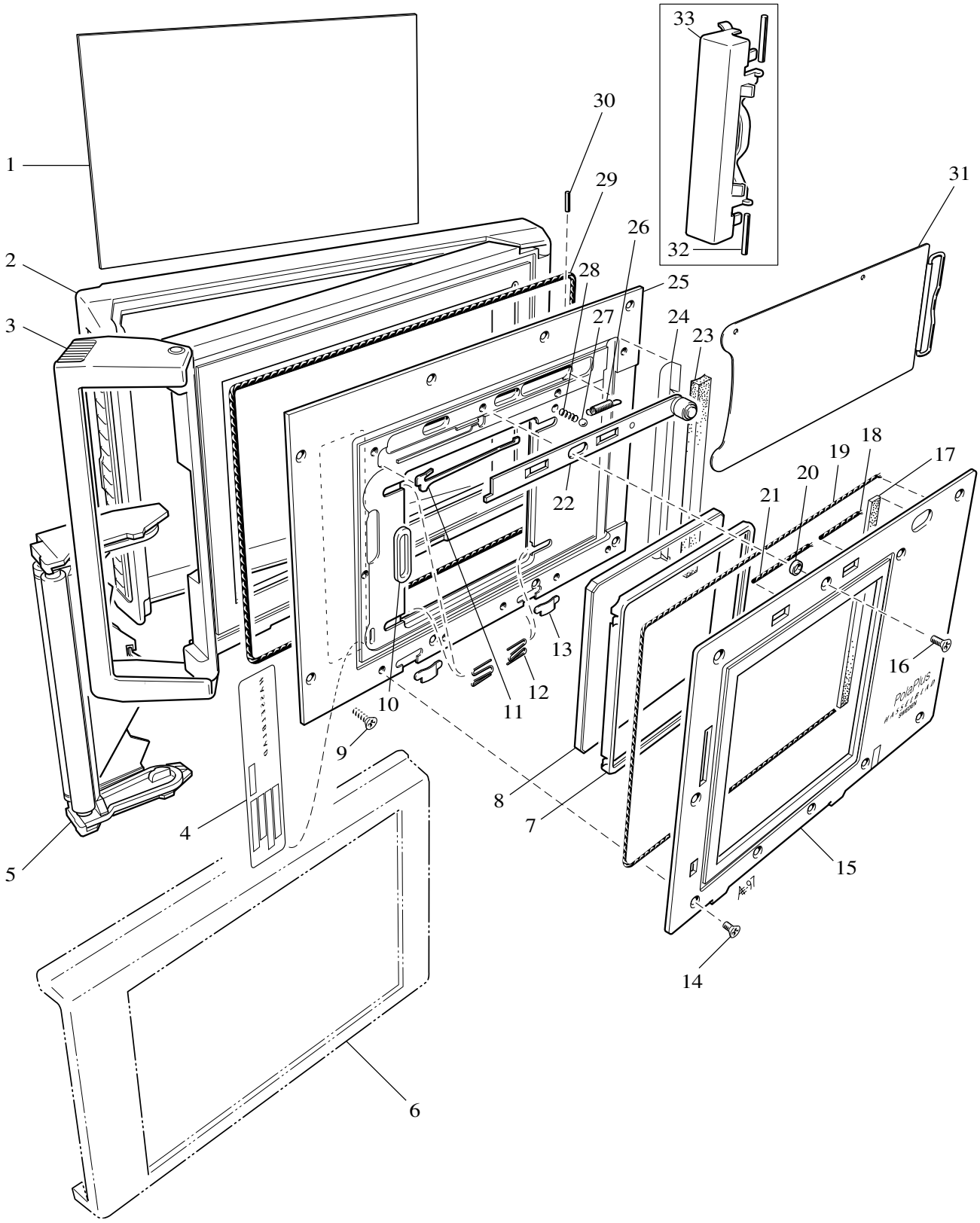
Magazine 100 for Polaroid film



Magazine 100 for Polaroid film

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	303 401	Leather	
2	1	302 408	Name plate	
3	1	303 323	Chassie	
4	1	303 403	Clamp	
5	1	302 426	Name plate	
6	1	302 427	Developing mechanism	
7			Film pack	Type 107, 108, 665, 667, 668, 669
8	1	302 428	Frame	
9	1	302 404	Glass plate	
10	8	823 755	Screw	
11	1	302 405	Light seal	
12	1	303 402	Locking spring	
13	4	302 429	Glass holder	
14	2	13 821	Plate spring	
15	7	823 620	Screw	
16	1	302 322	Outer plate	Please state serial No.
17	3	823 640	Screw	
18	1	12 295	Ribbon	
19	1	302 415	Light seal	
20	1	302 417	Light seal	
21	1	810 528	Washer	
22	1	302 416	Light seal	
23	1	302 103	Locking arm	
24	1	14 195	Light trap	
25	1	302 406	Foil	
26	1	303 303	Plate	
27	1	814 704	Spring	
28	1	302 418	Light seal	
29	1	Z 411 22	Magazine slide	
30	1	812 109	Pin	
31	1	302 101	Slide holder	
32	2	302 431	Pin	
33	1	302 432	Film pack holder	

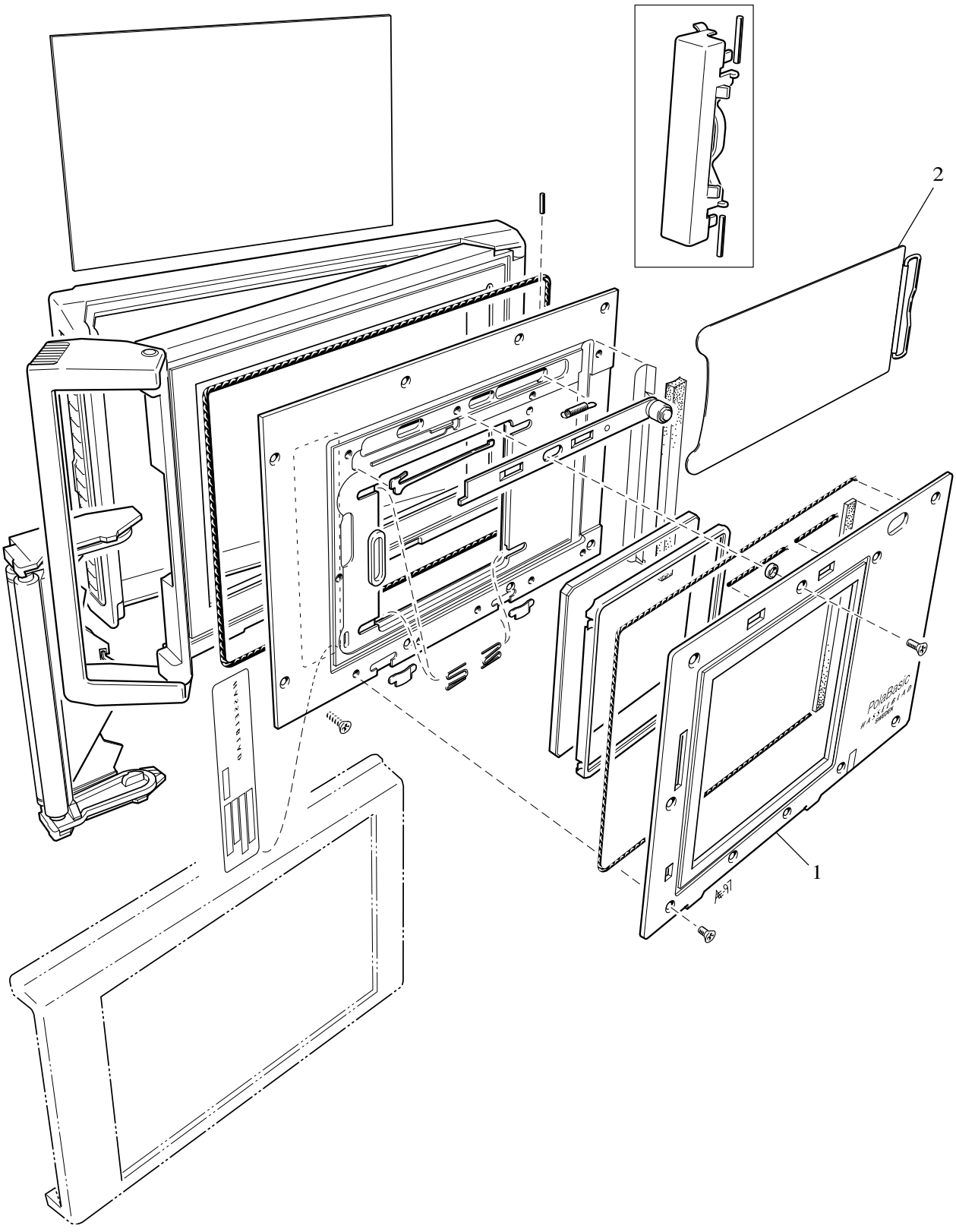
Magazine PolaPlus



Magazine PolaPlus

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	303 404	Leather	
2	1	303 323	Chassie	
3	1	303 403	Clamp	
4	1	302 426	Name plate	
5	1	302 427	Developing mechanism	
6			Film pack	Type 107, 108, 665, 667, 668, 669
7	1	302 428	Frame	
8	1	302 404	Glass plate	
9	8	829 845	Screw	
10	1	302 405	Light seal	
11	1	303 402	Locking spring	
12	2	302 429	Glass holder	
13	4	13 821	Plate spring	
14	9	829 525	Screw	
15	1	302 322	Outer plate	Please state serial No. and "to be used for PolaPlus"
16	1	829 540	Screw	
17	1	12 295	Ribbon	
18	1	302 415	Light seal	
19	1	302 417	Light seal	
20	1	810 528	Washer	
21	1	302 416	Light seal	
22	1	302 103	Locking arm	
23	1	14 195	Light trap	
24	1	302 406	Foil	
25	1	303 303	Plate	
26	1	814 704	Spring	
27	1	809 120	Steel ball	
28	1	815 604	Spring	
29	1	302 418	Light seal	
30	1	812 109	Pin	
31	1	Z 411 26	Magazine slide	
32	2	302 431	Pin	
33	1	302 432	Film pack holder	

Magazine PolaBasic

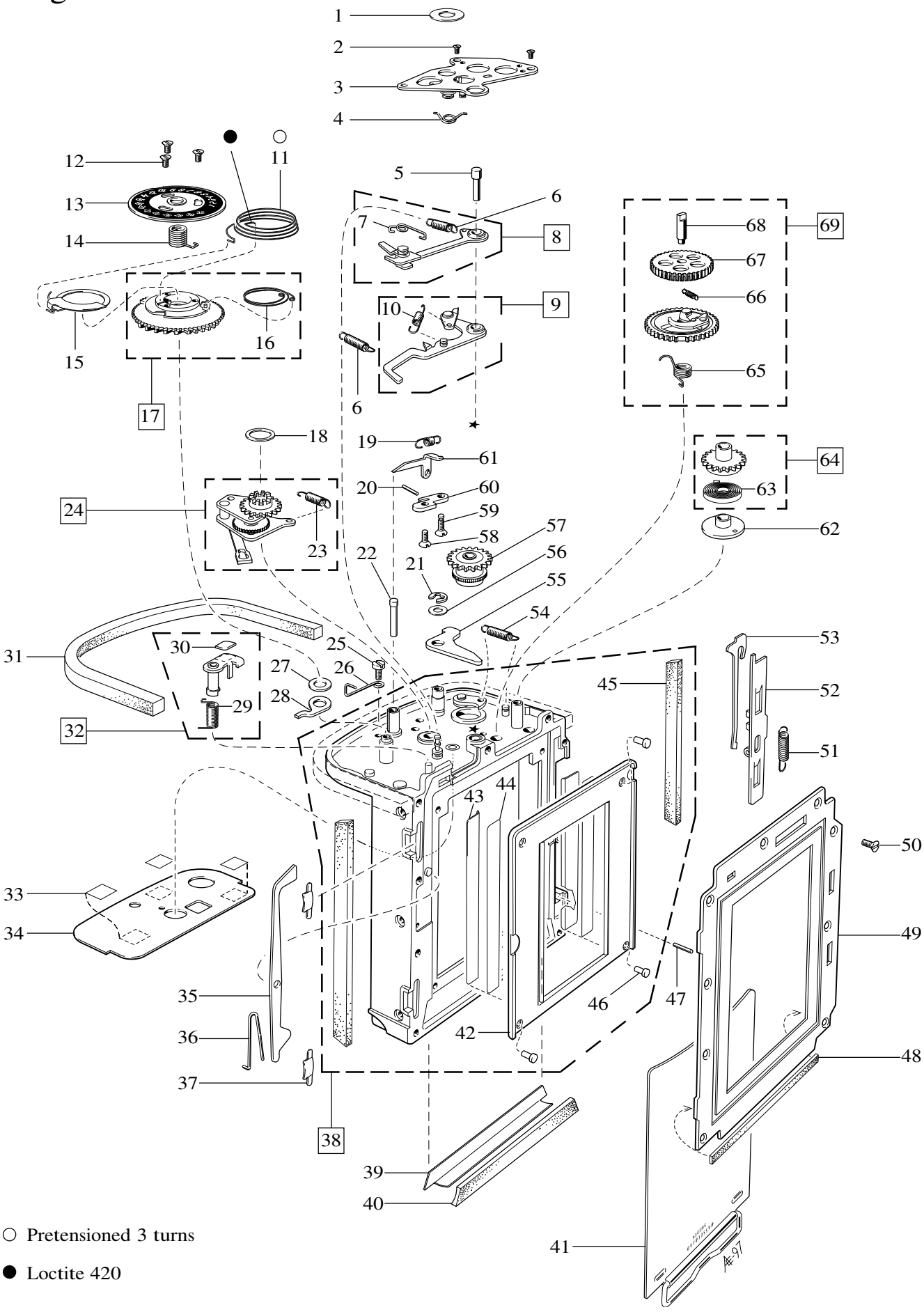


Magazine PolaBasic

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	302 322	Outer plate	Please state serial No. and "to be used for PolaBasic"
2	1	Z411 22	Magazine slide	Sales code 41122

Spare parts not listed are the same as for magazine PolaPlus

Magazine A32



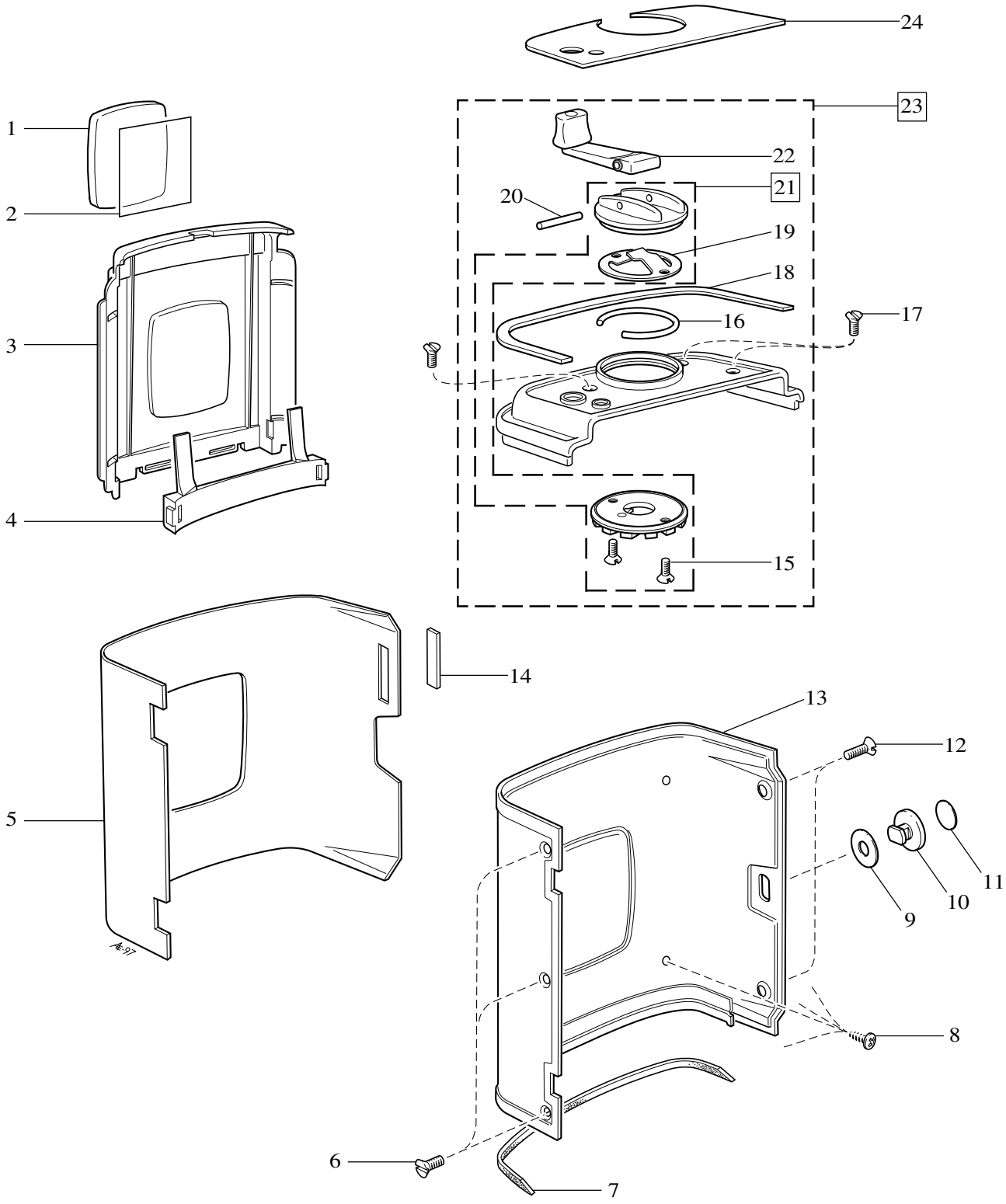
Magazine A32

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	810 927	Washer	
2	2	823 012	Screw	
3	1	308 485	Plate	
4	1	816 505	Spring	
5	1	12 819	Shaft	
6	2	814 527	Spring	
7	1	816 502	Spring	
8	1	607 318	Arm	
9	1	22 315	Release arm	
10	1	814 508	Spring	
11	1	607 094	Spring	
12	3	824 202	Screw	
13	1	607 320	Dial	
14	1	816 611	Spring	
15	1	607 089	Shade	
16	1	607 095	Spring	
17	1	607 316	Spacing gear	
18	1	810 926	Washer	
19	1	814 852	Spring	
20	1	812 005	Pin	
21	1	817 132	Clip	
22	1	13 754	Pin	
23	1	814 803	Spring	
24	1	607 313	Center mechanism	
25	1	820 012	Screw	
26	1	607 096	Catch	
27	1	810 778	Washer	
28	1	607 088	Stop	
29	1	816 509	Spring	
30	1	22 745	Tape	
31	1	22 716	Light seal	
32	1	607 314	Signal	
33	3	308 488	Tape washer	
34	1	22 747	Cover plate	
35	1	21 535	Exposure lock	
36	1	13 820	Spring	
37	2	13 821	Plate spring	
38	1	607 311	Magazine support	
39	1	13 508	Foil	
40	1	13 067	Light trap	
41	1	Z410 68	Magazine slide	
42	1	22 712	Picture frame	
43	2	309 407	Light seal	
44	2	309 408	Tape	
45	2	14 309	Light seal	
46	4	833 105	Rivet	
47	1	812 107	Pin	
48	1	12 295	Ribbon	
49	1	40 380	Outer plate	Please state serial No.
50	9	823 015	Screw	
51	1	814 752	Spring	
52	1	20 843	Locking arm	
53	1	20 684	Locking spring	

Magazine A32

Pos No.	Pcs	Spare Part No.	Description	Remark
54	1	814 307	Spring	
55	1	20 717	Return stop	
56	1	810 802	Washer	
57	1	12 209	Gear	
58	1	823 012	Screw	
59	1	824 060	Screw	
60	1	21 568	Bracket	
61	1	21 494	Link	
62	1	14 185	Hub	
63	1	14 184	Spring	
64	1	13 030	Spring housing	
65	1	816 707	Spring	
66	1	814 303	Spring	
67	1	12 215	Gear	
68	1	308 426	Shaft	
69	1	309 103	Gear assembly	

Magazine A32



Magazine A32

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	308 328	Film Indicator	
2	1	308 507	Tape	
3	1	308 536	Dark slide Holder	
4	1	308 400	Support	
5	1	30 312	Leather	
6	3	823 013	Screw	
7	1	22 409	Light seal	
8	4	826 038	Screw	
9	1	810 761	Teflon washer	
10	1	22 356	Button	
11	1	22 404	Leather	
12	2	823 017	Screw	
13	1	308 023	Shell	Chrome
	1	308 024	Shell	Black
14	1	607 883	Name plate	
15	2	823 015	Screw	
16	1	13 827	Tube	
17	3	823 012	Screw	
18	1	12 290	Leather	
19	1	13 826	Spring	
20	1	812 207	Pin	
21	1	21 572-2	Crank mounting	
22	1	13 810-1	Handle	
23	1	607 305	Cover right, complete	Chrome
	1	607 304	Cover right, complete	Black
24	1	308 411	Leather	